

A REVISION OF THE GENUS *AMASTRIS* (HOMOPTERA : MEMBRACIDAE)

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SYNOPSIS

The genus *Amastris* is redefined and fully revised. Forty-nine new species are described, two lectotypes are designated, one specific name is newly synonymized and removed from the genus, and four previously synonymized specific names are reinstated. Two keys, one based on external characters, the other on male genitalia, are provided for the identification of the sixty-eight species examined.

INTRODUCTION AND HISTORICAL REVIEW

THE tribe Amastrini belongs to the subfamily Smiliinae and was originally proposed by Goding (1926 : 312) under the name Amastrisini to include the genera *Amastris* Stål, *Boethoos* Kirkaldy, *Tynelia* Stål, *Vanduzee* Goding, *Hygris* Stål, *Idioderma* Van Duzee, *Gelastophora* Kirkaldy, *Erosne* Stål, and *Lallemandia* Funkhouser. Funkhouser (1927 : 299) synonymized Amastrisini with the tribe Polyglyptini Goding and included all the above genera except *Erosne*, which he transferred to the tribe Smiliini Goding, and *Gelastophora*, which he synonymized with the genus *Hemiptycha* Germar in the subfamily Darninae. Three years later Goding (1929 : 263) reinstated the Amastrisini for the original nine genera and amended the name to Amastrini. He also recognized *Gelastophora* as a synonym of *Hemiptycha* which he transferred to the Amastrini, and at the same time synonymized *Idioderma* with *Hygris*. This arrangement was subsequently accepted by Funkhouser (1950 : 135), with the exception of *Hemiptycha* which he transferred back to the Darninae. He also included the genus *Bajulata* Ball in the Amastrini,

and reinstated *Idioderma* as a distinct genus. Metcalf (1965 : 871) transferred the genera other than *Amastris* to the tribe Polyglyptini, and synonymized *Boethoos* with *Harmonides* Kirkaldy. Although the inclusion of these genera in the Polyglyptini is not regarded as necessarily correct, it does appear that the differences between them and *Amastris* are such as to justify their removal from the Amastrini.

The genus *Amastris* itself was originally proposed by Stål (1862 : 29) to accommodate three new species from Brazil, *fallax*, *simillima*, and *consanguinea*. Later Stål (1869) transferred *Membracis obtegens* Fabricius to the genus, and Goding (1894) described *Vanduzeeia laeta*, and, in the same paper, as an addendum, transferred it to *Amastris*. This later combination has, however, been ignored by Van Duzee (1908) and subsequent authors. The genus remained limited to four species until Funkhouser (1922) described another six new species, *brunneipennis*, *maculata*, and *sabulosa* from Brazil, and *elevata*, *minuta*, and *projecta* from Peru. Haviland (1925) added two more new species, *vismiae* and *funkhouserii* from Guyana, and in 1927 Funkhouser himself transferred *Thelia compacta* Walker (1858) to *Amastris*, synonymized *fallax* with it, and designated *compacta* as the type-species of the genus; he also included in *Amastris* the species *Membracis antica* Germar (1821) from Brazil, '*Cicada flavifolia* Stoll (1788)' from Surinam, and *Thelia citrina* Fairmaire (1846) from Colombia. Goding (1929 : 263) published the first key to the species of the genus and proposed five new synonymies, reducing the number of valid species to eleven. The known range of the genus was greatly increased when Ball (1933) described two species, *templa* and *lycioda*, from the southern U.S.A. Funkhouser (1940) added *peruviana*, another species from Peru, and Fonseca (1941) described *guttata* from Brazil. In 1943 Funkhouser also described *pacifica* from Guatemala. (As a result of the present study this species is removed from *Amastris* - see p. 422.)

The published work on *Amastris* subsequent to that noted above is extremely limited; the major publications are those of Funkhouser (1950) which includes a generic description, a list of species, and a key to the genera of the Amastrini, and Metcalf (1965) who gave a catalogue of species and an extensive bibliography.

The designation of type-species by Funkhouser (1927), noted above, has led to some confusion. In accordance with Article 69 (a) (iv) of the *International Code of Zoological Nomenclature*, *fallax* is the type-species of *Amastris*. An examination of the types of *compacta* and *fallax*, carried out in the present study, has revealed them to be distinct species; *fallax* is therefore reinstated as a valid name.

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TECHNIQUES

Although all the species involved in the present study may be distinguished by external characters alone (usually the size and proportions of the pronotum and head, and sometimes also the pigmentation), some of these differences may occasionally be very slight. For this reason the structure of the male genitalia, in particular the aedeagus, is used here for the first time as a reliable means of separating the majority of species, especially those most similar externally.

The measurements of the pronotum as used in the text are taken as follows: the total length of the pronotum is measured along a line running from the anterior edge of the metopidium, through the humeral angle, to the posterior apex; the maximum height of the pronotum is measured along a line running perpendicular to the above, from the level of the humeral angle to the highest point of the dorsum; the maximum width of the pronotum is measured across the humeral angles. These, and the measurements of the head, are arranged in the text as follows: the size range of the pronotum of all available specimens, followed by the full head and pronotal measurements for one specimen, usually a male, near the mean for the series to show the relative proportions. The proportions for all specimens of a species are similar unless otherwise stated. Female pronotal measurements are also given where specimens are available.

The position of the ocelli is measured relative to a line (the centro-ocular line) running through the centre of the eyes. The presence or absence of shallow indentations in the sides of the pronotum is a consistent and useful character, and is best observed with the naked eye or with a hand lens, or, if a microscope is used, with the incident light at an acute angle to the surface. Due to the difficulty of accurately describing the relative curvature of the pronotum in many species reference should be made to the text-figures.

The terms used in the text are those in common current usage for the various morphological characters of the Membracidae and other families of the Auchenorrhynchous Homoptera. Those used to describe the tegmina may be found in Funkhouser (1950 : 44); while those concerning the head and pronotum are given by Capener (1968 : 3), with the exception of the term 'frontoclypeus' which is used here to denote that part of the clypeus which is visible when the head is viewed anteriorly, and the 'dorsum' which refers to the dorsal surface of the pronotum posterior to the metopidium.

Due to the close external similarity between many species, extensive reference is made to the structure of the male genitalia, of which the shaft of the aedeagus has been found to show a consistent, and often considerable, degree of diversity between species, especially those with a highly elevated pronotum. There are also lesser, but distinct, differences between the parameres of many species.

The diagnostic features of both aedeagus and paramere are heavily chitinized and do not require staining. The method of preparation is similar to that used for the genitalia of the majority of the Auchenorynchous Homoptera. The genitalia, together with the last three abdominal segments, are removed from the specimen, macerated in KOH and examined in glycerine. The structure of the shaft and of the distal portion of the paramere can often be observed without further dissection. The majority of the diagnostic characters of the shaft are visible in lateral aspect, though to ascertain the number of rows of spines across the anterior surface in some species, it is necessary that it be examined from the posterior aspect.

Most previous workers on the Membracidae have either ignored the structure of the male genitalia, or have noted it without commenting on its possible taxonomic significance (i.e. Capener, 1968 : 2). However, the remarkable diversity between the various forms of aedeagus revealed by the present study has shown relationships within *Amastris*, and between it and other closely related genera, which form the basis for the species groupings and discussion as set out on p. 354. In contrast to the aedeagus, the paramere appears to have no taxonomic significance above specific level.

DISTRIBUTION

The majority of the species of *Amastris* are Neotropical in distribution. They occur mostly in forest and savanna areas, often those with high rainfall. Their evolution seems to have been confined to the territories to the east and north of the Andes, and to the northern end of that mountain range in Central America. As far as is known, no species has been recorded from the high Andes of Peru or from the fertile valleys crossing the western coastal desert of that country.

The great majority of species, including most of the forms with a highly elevated pronotum and the maximum variation in the structure of the male genitalia, are recorded from South America. Species are recorded from Brazil, Colombia, Peru, Ecuador, Guyana, Surinam, French Guiana, Venezuela and Bolivia, and the southern limit appears to be in Paraguay. Nine species are recorded from Central America, from Guatemala, Nicaragua, Costa Rica, Mexico, Panama, and British Honduras (Belize). The only species recorded from the Caribbean, from Trinidad, is also found in Guyana. Only two species have been recorded from the Nearctic Region, one from Utah and the other from Arizona. The fact that both these species have a low pronotum and a restricted range well separated from the rest of the genus by the Mexican Desert, suggests that they represent a relict fauna, are relatively primitive, and are closer to the ancestral stock than many of those species occurring in the Neotropical Region (see discussion on p. 354).

As far as can be ascertained from the available material, the majority of species are very restricted in their distribution. Many of the previous records are un-

reliable due to the external similarity between many of the species and their resemblance is some cases to those of other genera.

AMASTRIS Stål

Amastris Stål, 1862 : 29. Type-species: *Amastris fallax* Stål, by subsequent designation (Funkhouser, 1927 : 302, as *Amastris compacta* (Walker)) under Article 69 (a) (iv) of the Code.

Head large, vertical or inclined slightly backwards, never sloping forwards; width nearly as great as maximum width of pronotum; surface almost flat, slightly raised between ocelli, finely, irregularly, and obscurely ridged and punctate; pubescence sparse, long, strong, erect. Eyes large, prominent. Frontoclypeus trilobed, often very obscurely so. Rostrum robust, reaching middle of hind coxae.

Pronotum with maximum width across humeral angles, tapering regularly to posterior apex, without lateral horns or processes; dorsum smoothly and regularly curved; median carina distinct, percurrent, arising near base of metopidium; lateral carinae absent; pubescence sparse, long, erect. Metopidium triangular with supra-ocular callosities obscure and impunctate.

Tegmen always partially covered by pronotum, with most of anal area and part of corium concealed; with five apical and three discoidal cells. Basal part of subcostal cell and exposed areas of anal cells coriaceous and punctate, with scattered short, erect pubescence. Subcostal cell occupying approximately two-thirds total length of costal margin. Third apical cell at apical angle of tegmen, broader than long, base almost straight or obtusely angled, posterior margin broadly rounded. Fifth apical cell very large, often as great in area as all other apical cells together, almost or completely concealed by pronotum. Wings with four apical cells, second acutely angled basally.

Pigmentation variable; the majority of species green in life, dull yellowish brown in preserved specimens; with or without darker markings on pronotum, tegmen, or ventral surfaces.

Male genitalia with structure of aedeagus extremely variable; shaft vertically or posteriorly directed, with or without spines on anterior surfaces, occasionally with basal or subapical processes; basal apodeme always vertical. Paramere strongly recurved and heavily chitinated distally, with a number of slender erect spines subapically.

There is no single character which separates *Amastris* from all other genera of the Amastrini (sensu Funkhouser, 1950), but the combination of three discoidal cells in the tegmen and the prominent keel-like median carina which runs the entire length of the pronotum is sufficient to distinguish it.

Those species with the pronotum highly elevated bear a close superficial resemblance to those of the other New World genera *Archasia* and *Antianthe* (Smiliinae : Smiliini) and *Cymbomorpha* (Darninae : Cymbomorphini), but may be readily separated from them by the presence of the three discoidal cells in the *Amastris* tegmen. *Amastris exaltata* bears a strong resemblance in size and pronotal development to *Hille maculicornis*, but differs in that the latter species has faint lateral carinae on the pronotum and only two discoidal cells in the tegmen.

Among those species of the other genera of the Amastrini (sensu Funkhouser) of which specimens have been available for the present study, only *Erosne notata* Walker (which is synonymized by Metcalf (1965) with *Hille maculicornis* Fairmaire) has the pronotum highly elevated and keel-like. The species of the genera *Boethoos*, *Vanduzee*, *Bajulata*, *Tynelia*, *Idioderma*, and *Hygris* (all removed to the Polyglyptini

by Metcalf, 1965) all have the median carina of the pronotum weak, obsolete, or not extending the entire length of the dorsum; and the pronotum is in consequence much more rounded in cross-section. The single species of *Lallemandia*, *nodosa* Funkhouser, is characterized by the tumid elevations of the pronotum and the lack of a percurrent median carina. All the species of the above genera where males have been available for study, as well as *Polyglypta costata* Burmeister, have a simple, U-shaped aedeagus, with the shaft directed vertically and without lateral processes.

This combination of relatively undeveloped pronotum and simple U-shaped aedeagus is therefore seen to be the most common condition within the Amastrini (sensu Funkhouser) and is thus regarded as being the primitive state. Those species of *Amastris* which are of this form are therefore considered to be more primitive than those in which the pronotum is highly elevated and the aedeagus a highly complex structure.

Of the genera of the Amastrini, only *Vanduzee* and *Amastris* occur in both the Nearctic and Neotropical regions. All the other genera are restricted to the Neotropical region, except for *Bajulata*, which is known only from a single species from Arizona. It is thus assumed that *Amastris* first evolved as a distinct genus in Central America or the northern part of South America, and that the two Nearctic species, *lycioda* and *templa*, reached the United States before the formation of the Mexican Desert which effectively isolated them from the more advanced forms evolving in the south. This hypothesis is supported by the fact that these two species have the pronotum little elevated and the aedeagus U-shaped; though not quite as simple as in some other species (Text-figs 223, 252).

The species of *Amastris* fall into seven well defined groups based on the degree of pronotal development and on the structure of the aedeagus. The genitalic differences between the groups is greater than that existing between the individual genera of the Polyglyptini (sensu Metcalf). These species groups are as follows.

The *funkhouser*i-group. Degree of pronotal development extremely variable, often primitive with the exception of a few species, e.g. *exaltata*. Aedeagus simple, U-shaped; shaft directed vertically, with spines subapical on anterior surface; gonopore subapical on posterior surface. This is the largest group and includes all species for which males are available with the exception of those set out below.

The *obtegens*-group. Pronotum highly elevated. Aedeagus U-shaped; shaft directed vertically, with spines widely separated along the entire length of posterior surface; gonopore apical. *A. obtegens* only.

The *dissimilis*-group. Pronotum highly elevated. Aedeagus U-shaped; shaft directed vertically, apex very greatly expanded laterally with a single vertical row of spines on lateral margins; gonopore subapical on posterior surface. *A. dissimilis* only.

The *flavifolia*-group. Pronotum highly elevated. Aedeagus with shaft horizontal, directed posteriorly; with a pair of short, broad, ventrally directed subapical processes, each with small spines on anteroventral and/or posteroventral surfaces; gonopore apical, between bases of processes. *A. flavifolia* and *A. vismia*e only.

The *interstincta*-group. Pronotum highly elevated. Aedeagus with shaft horizontal, directed posteriorly; with a pair of short, lateral, bifid subapical processes; and with a group of small spines on dorsal surface; gonopore apical. Probably derived from the *flavifolia*-group. *A. interstincta* and *A. ramosa* only.

The *dama*-group. Pronotum highly elevated. Aedeagus with shaft horizontal, directed posteriorly; with a pair of long, much branched apical processes directed posteriorly and curving slightly dorsally; a pair of slightly less branched subapical processes directed anteriorly and ventrally; and a group of small spines dorsally near base of shaft; gonopore apical, between bases of apical processes. Probably derived from the *interstincta*-group. *A. dama* only.

The *vitallina*-group. Pronotum highly elevated. Aedeagus U-shaped; shaft almost vertical, very slender; a pair of posterodorsally directed processes arising near base on posterolateral surfaces; gonopore apical, very small. A very distinct group comprising *A. vitallina* and *A. concolor* only.

The species groups outlined above are based entirely on the structure of the aedeagus. Since many of the species of *Amastris* are known only from female specimens it is considered unwise to describe new genera at the present time on the basis of the above genitalic differences. Pronotal differences between species and species groups are so slight and gradual that no new generic distinction can be based on these or any other external character. It is possible, however, that as the genus becomes better known, it may well prove necessary to divide it along the lines set out above.

It has not as yet been possible to define reliably a male of *fallax*, the type-species of *Amastris*, but it would appear from the study of species with very similar pronotal development, that *fallax* possesses a simple U-shaped aedeagus with the spines clustered subapically on the anterior surface of the shaft and with the gonopore subapical on the posterior surface; it is thus tentatively placed in the *funkhouserii*-group of species.

KEY TO SPECIES OF *AMASTRIS*

(Based on external characters)

The species *antica* Germar and *citrina* Fairmaire are not included in this key due to the absence of reliably determined material for the present study. In some cases the differences between species are slight and the pigmentation somewhat variable; in these instances reference should be made to the figures and, where possible, to the structure of the male genitalia.

- 1 Pronotum with a short, often indistinct or obsolete, vertically directed horn at junction of metopidium and dorsum 2
- Pronotum not as above, junction of metopidium and dorsum rounded or angular 5
- 2 (1) Pronotum with junction of metopidium and dorsum produced into a short, vertically directed horn (Text-fig. 1) *exaltata* Walker (p. 376)
- Pronotum with dorsal horn obsolete or indistinct 3
- 3 (2) Pronotum with junction of metopidium and dorsum almost 90°, dorsal horn obsolete 4
- Pronotum with junction of metopidium and dorsum more obtusely rounded; horn vestigial, very indistinct (Text-fig. 2) *subangulata* sp. n. (p. 378)
- 4 (3) Pronotum with posterior apex terminating well before tips of tegmina (Text-fig. 37). Tegmen with apical limbus weakly pigmented *punctata* sp. n. (p. 384)
- Pronotum with posterior apex reaching or very nearly reaching tips of tegmina (Text-fig. 4). Tegmen with apical limbus strongly pigmented *angulata* sp. n. (p. 386)

5	(1)	Pronotum with length less than two and a half times height	6
-		Pronotum with length greater than two and a half times height	12
6	(5)	Pronotum with length less than twice height, almost foliaceous	7
-		Pronotum with length two to two and a half times height	8
7	(6)	Metopidium with height distinctly greater than width (Text-fig. 93). Exposed area of tegmen unpigmented except for coriaceous areas	
		<i>vismiae</i> Haviland (p. 371)	
-		Metopidium with height equal to width (Text-fig. 94). Exposed area of tegmen pale brownish	
8	(6)	Exposed area of tegmen unpigmented except for coriaceous areas, and in some cases apical limbus	9
-		Exposed area of tegmen darkly pigmented with a clear hyaline spot centrally in basal third (Text-fig. 26)	
9	(8)	Tegmen with fifth apical cell completely concealed by side of pronotum	10
-		Tegmen with fifth apical cell not completely concealed (Text-fig. 3).	
		<i>flavifolia</i> Funkhouser (p. 370)	
10	(9)	Median carina of pronotum narrowly and distinctly edged with dark brown or black	11
-		Median carina concolourous with rest of pronotum, pale yellowish brown (Text-fig. 6)	
		<i>straminea</i> sp. n. (p. 415)	
11	(10)	Metopidium arising almost vertically above head (Text-fig. 35); total length less than 5.0 mm	
-		Metopidium distinctly inclined forwards above head (Text-fig. 32); total length 5.5 mm	
		<i>concolor</i> sp. n. (p. 366)	
12	(5)	Pronotum reddish with distinct irregular pale spots	13
-		Pronotum not as above	14
13	(12)	Total length of pronotum less than 3.0 mm; posterior apex not reaching tips of tegmina (Text-fig. 31).	
-		Total length of pronotum 4.0 mm; posterior apex reaching tips of tegmina (Text-fig. 27).	
		<i>viridisparsa</i> sp. n. (p. 392)	
		<i>guttata</i> Fonseca (p. 395)	
14	(12)	Ventral surfaces of thorax dark brown or black, much darker than posterior part of pronotum	15
-		Ventral surfaces of thorax pale, concolorous with or only slightly darker than posterior part of pronotum	27
15	(14)	Junction of metopidium and dorsum regularly curved (Text-fig. 39). Metopidium usually concolorous with rest of pronotum	19
-		Junction of metopidium and dorsum stepped (Text-fig. 38). Metopidium with irregular brown or black markings	16
16	(15)	Tegmen with exposed part of apical limbus darkly pigmented	17
-		Tegmen with exposed part of apical limbus clear hyaline	18
17	(16)	Sides of pronotum with a dark band running vertically from immediately posterior to humeral angle to median carina at junction of metopidium and dorsum; median carina with prominent dark spots (Text-fig. 38)	
		<i>fasciata</i> sp. n. (p. 375)	
-		Sides of pronotum not as above; median carina with indistinct dark spots (Text-fig. 34)	
		<i>sakakibaraei</i> sp. n. (p. 408)	
18	(16)	Metopidium smooth in lateral profile (Text-fig. 36), darkly pigmented throughout. Sides of pronotum pale yellowish brown without darker markings	
		<i>maculata</i> Funkhouser (p. 406)	
-		Metopidium with distinct transverse indentation near base, immediately below commencement of median carina (Text-fig. 33); darkly pigmented laterally, paler in centre. Sides of pronotum with an irregular dark band at two-thirds distance to posterior apex, not reaching to lower lateral margin	
		<i>notata</i> sp. n. (p. 398)	

- 19 (15) Pronotum and median carina concolorous 22
 - Pronotum with median carina darker edged or with dark spots 20
- 20 (19) Tegmen pigmented only on coriaceous areas and exposed part of apical limbus 21
 - Tegmen with greater part of exposed area brownish hyaline (Text-fig. 39)
alapigmentata sp. n. (p. 383)
- 21 (20) Pronotum with length slightly less than three times height (Text-fig. 43).
 Basal two-fifths of subcostal cell coriaceous and punctate *dissimilis* sp. n. (p. 364)
 - Pronotum with length three and a half times height (Text-fig. 41). Basal
 three-quarters of subcostal cell weakly coriaceous and punctate
flava sp. n. (p. 393)
- 22 (19) Exposed part of tegmen darkly pigmented except for part of apical area and
 first discoidal cell (Text-fig. 44) *brunneipennis* Funkhouser (p. 380)
 - Exposed part of tegmen pigmented only on coriaceous areas and, usually,
 apical limbus 23
- 23 (22) Tegmen with exposed part of apical limbus pigmented, sometimes lightly so.
 Posterior apex of pronotum usually acute in lateral aspect. Central and
 South America 24
 - Tegmen with exposed part of apical limbus unpigmented. Posterior apex of
 pronotum rounded in lateral aspect (Text-fig. 40). U.S.A. *templa* Ball (p. 420)
- 24 (23) Tegmen with apical limbus pale yellowish brown, no other pigmentation except
 on coriaceous areas. Metopidium often with irregular brown markings 26
 - Tegmen with apical limbus dark, or if pale then basal area of tegmen dark
 brown or black. Metopidium concolorous with rest of pronotum 25
- 25 (24) Basal area of tegmen concolorous with pronotum (Text-fig. 17)
fonsecai sp. n. (p. 382)
 - Basal area of tegmen very much darker than pronotum (Text-fig. 22)
froeschneri sp. n. (p. 385)
- 26 (24) Pronotal length greater than 4.25 mm (Text-fig. 5) *revelata* sp. n. (p. 413)
 - Pronotal length less than 3.25 mm (Text-fig. 18) *panamensis* sp. n. (p. 411)
- 27 (14) Pronotum unmarked, median carina and metopidium concolorous 43
 - Pronotum with distinct darker markings anteriorly and on metopidium, or with
 median carina narrowly edged black or with dark spots 28
- 28 (27) Median carina narrowly edged with black or with dark spots throughout its
 length 29
 - Median carina either concolorous with rest of pronotum, or markings not
 percurrent 40
- 29 (28) Pronotum unmarked except for dark pigmentation confined to median carina 32
 - Pronotum either irregularly mottled or with distinct dark pigmentation on
 metopidium 30
- 30 (29) Metopidium dark brown; median carina with numerous dark brown spots
 (Text-fig. 19) *pseudomaculata* sp. n. (p. 399)
 - Pronotum not marked as above 31
- 31 (30) Pronotum indistinctly and irregularly mottled with yellow and brown; median
 carina with scattered dark spots. Pronotal length less than 3.5 mm. Meto-
 pidium rounded in lateral aspect (Text-fig. 45). *sabulosa* Funkhouser (p. 414)
 - Pronotum with metopidium darker, paler centrally at base and with a short
 pale band from junction of metopidium and dorsum for half distance towards
 humeral angles. Pronotal length greater than 5.5 mm. Metopidium rising
 vertically above head (Text-fig. 54) *pseudoelevata* sp. n. (p. 388)
- 32 (29) Median carina of pronotum with dark spots; with or without narrow black edge 33
 - Median carina of pronotum narrowly edged with black; without dark spots 34
- 33 (32) Pronotal length greater than 5.5 mm. Apical limbus of tegmen yellowish.
 Subcostal cell with less than basal third coriaceous (Text-fig. 16)
robusta sp. n. (p. 381)

- Pronotal length 4.5 mm. Apical limbus of tegmen dark. Subcostal cell with basal three-quarters coriaceous (Text-fig. 51) . . . *inermis* sp. n. (p. 407)
- 34 (32) Pronotal length over 6.0 mm. Median carina of dorsum highly elevated (Text-fig. 111) 35
- Pronotal length less than 5.0 mm. Median carina of dorsum not highly elevated (Text-fig. 113) 36
- 35 (34) Exposed part of tegmen except coriaceous areas clear hyaline. Median carina of pronotum abruptly becoming highly elevated on metopidium (Text-fig. 47) *projecta* Funkhouser (p. 417)
- Exposed part of tegmen brownish except for large clear spot in basal half, apical limbus dark brown. Median carina becoming gradually elevated towards junction of metopidium and dorsum (Text-fig. 50) *peruviana* Funkhouser (p. 416)
- 36 (34) Tegmen with second, third, and fourth apical cells dark brown. Pronotal length less than 3.5 mm, nearly three times as long as high (Text-fig. 48) *exigua* sp. n. (p. 379)
- Tegmen unpigmented except for coriaceous areas, occasionally weakly pigmented on exposed part of apical limbus. Pronotal length more than 4.0 mm, distinctly less than three times height 37
- 37 (36) Metopidium inclined slightly forwards above head 38
- Metopidium vertical above head before curving posteriorly to junction with dorsum (Text-fig. 56) *interstincta* sp. n. (p. 369)
- 38 (37) Metopidium little wider than high (Text-fig. 85) *vitallina* sp. n. (p. 367)
- Metopidium distinctly wider than high (Text-fig. 117) 39
- 39 (38) Basal area of subcostal cell of tegmen very indistinctly coriaceous and punctate. Head less than twice as broad as long (Text-fig. 55) *knighti* sp. n. (p. 372)
- Basal area of subcostal cell of tegmen strongly coriaceous and punctate.. Head twice as broad as long (Text-fig. 21) *unica* sp. n. (p. 374)
- 40 (28) Junction of metopidium and dorsum a smooth uninterrupted curve in lateral aspect. Sides of pronotum smooth 42
- Junction of metopidium and dorsum distinctly stepped in lateral aspect. Sides of pronotum with shallow indentations 41
- 41 (40) Pronotal length less than 3.5 mm, posterior apex terminating well before tips of tegmina (Text-fig. 25). *undulata* sp. n. (p. 392)
- Pronotal length more than 4.5 mm. Pronotum reaching nearly to tips of tegmina (Text-fig. 23). *specialis* sp. n. (p. 400)
- 42 (40) Pronotal length not more than 3.5 mm. Median carina low, arising gradually from near base of metopidium (Text-fig. 53). Dark markings on pronotum confined to lower central part of metopidium *janae* sp. n. (p. 405)
- Pronotal length approximately 4.0 mm. Median carina becoming abruptly elevated some distance above base of metopidium (Text-fig. 7). Whole of metopidium indistinctly mottled dark brown *conspicua* sp. n. (p. 398)
- 43 (27) Pronotum with junction of metopidium and dorsum smoothly rounded in lateral profile (Text-fig. 14) 47
- Pronotum with junction of metopidium and dorsum distinctly stepped or very acutely rounded in lateral profile (Text-fig. 9) 44
- 44 (43) Metopidium straight in lateral profile, distinctly inclined forwards above head; junction with dorsum acutely rounded (Text-fig. 20) *inclinata* sp. n. (p. 379)
- Metopidium in lateral profile curving regularly backwards from base, then rising again at junction with dorsum 45
- 45 (44) Pronotum with length very nearly four times height (Text-fig. 9) *consanguinea* Stål (p. 410)
- Pronotum with length not more than three and a quarter times height 46

- 46 (45) Ocelli small, indistinct (Text-fig. 120). Pubescence on head long. Tegmen with apical limbus narrow (Text-fig. 62) *simillima* Stål (p. 417)
- Ocelli large, prominent (Text-fig. 82). Pubescence on head short. Tegmen with apical limbus broad (Text-fig. 11) *funkhouseri* Haviland (p. 404)
- 47 (43) Metopidium in lateral profile arising straight from base, vertical or inclined slightly forwards 48
- Metopidium in lateral profile curving smoothly backwards from base 53
- 48 (47) Pronotum with length more than three times height (Text-fig. 59) *depressa* sp. n. (p. 402)
- Pronotum with length less than three times height 49
- 49 (48) Tegmen with basal area of subcostal cell coriaceous and punctate for less than half length of cell 50
- Tegmen with basal area of subcostal cell coriaceous and punctate for more than three-quarters length of cell 51
- 50 (49) Metopidium with width equal to height (Text-fig. 88). Tegmen with apical limbus unpigmented *vicina* sp. n. (p. 387)
- Metopidium with width one and a third times height (Text-fig. 131). Tegmen with apical limbus pale greyish hyaline *finitima* sp. n. (p. 388)
- 51 (49) Sides of pronotum with three shallow, indistinct indentations (Text-fig. 57) [best observed with light source at acute angle to surface] *evexa* sp. n. (p. 396)
- Sides of pronotum smooth 52
- 52 (51) Pronotal length in excess of 4.5 mm. Ocelli below centro-ocular line (Text-fig. 121) *obscura* sp. n. (p. 365)
- Pronotal length distinctly less than 4.5 mm. Ocelli on centro-ocular line (Text-fig. 125) *compacta* Walker (p. 409)
- 53 (47) Sides of pronotum with shallow, sometimes rather indistinct, indentations (Text-fig. 8) 54
- Sides of pronotum smooth 64
- 54 (53) Tegmen with pigmentation on coriaceous areas only 58
- Tegmen with pigmentation not restricted to coriaceous areas 55
- 55 (54) Exposed part of tegmen with a pale pigmented band transversely from costal margin near posterior end of subcostal cell; apical limbus unpigmented 56
- Exposed part of tegmen without central transverse band; apical limbus pigmented 57
- 56 (55) Subcostal cell heavily coriaceous and punctate for five-sixths its length (Text-fig. 61) *discreta* sp. n. (p. 418)
- Subcostal cell indistinctly coriaceous and punctate for basal three-quarters its length (Text-fig. 49) *dama* sp. n. (p. 368)
- 57 (55) Pronotal length distinctly greater than 5.0 mm. Metopidium with width less than one and a half times height (Text-fig. 89) *fallax* Stål (p. 415)
- Pronotal length less than 5.0 mm. Metopidium with width more than one and a half times height (Text-fig. 128) *sulphurea* sp. n. (p. 412)
- 58 (54) Posterior apex of pronotum rounded in lateral profile (Text-fig. 13) *arquata* sp. n. (p. 412)
- Posterior apex of pronotum acute in lateral profile 59
- 59 (58) Pronotal length less than 3.3 mm; or, if larger, with fifth apical cell of tegmen relatively well exposed 60
- Pronotal length greater than 3.8 mm; fifth apical cell of tegmen usually completely concealed 61
- 60 (59) Pronotal length less than 3.3 mm. Metopidium with width one and a half times height *reclusa* sp. n. (p. 394)
- Pronotal length greater than 3.5 mm. Metopidium with width less than one and one half times height (Text-fig. 123) *evexa* sp. n. (p. 396)
- 61 (59) Metopidium with width one and a half times height. Head with width dis-

- tinctly more than twice length (Text-fig. 81). Pronotal length greater than 4.75 mm. *affinis* sp. n. (p. 397)
- Metopidium with width less than one and a half times height. Head with width not more than twice length. Pronotal length less than 4.25 mm. 62
- 62 (61) Pronotum with length approximately two and a half times height (Text-fig. 68), length less than 3.75 mm. *melina* sp. n. (p. 401)
- Pronotum with length approximately three times height, length more than 4.0 mm. 63
- 63 (62) Tegmen with basal two-thirds of subcostal cell coriaceous and punctate, basal third densely so (Text-fig. 12). Paraguay *inornata* sp. n. (p. 404)
- Tegmen with basal five-sixths of subcostal cell very weakly coriaceous and punctate (Text-fig. 63). Peru *gregaria* sp. n. (p. 403)
- 64 (53) Tegmen, except coriaceous areas, unpigmented 66
- Tegmen with distinct dark markings 65
- 65 (64) Exposed part of tegmen with a brown transverse band immediately anterior to apical limbus. Posterior apex of pronotum rounded in lateral aspect (Text-fig. 52) *minuta* Funkhouser (p. 375)
- Exposed part of tegmen with a dark brown transverse band basally and another apically which includes apical limbus. Posterior apex of pronotum acute in lateral aspect (Text-fig. 22) *froeschneri* sp. n. (p. 385)
- 66 (64) Pronotal length greater than 5.0 mm. Posterior apex of pronotum reaching tips of tegmina (Text-fig. 67) *inconspicua* sp. n. (p. 389)
- Pronotal length not greater than 4.0 mm. Posterior apex of pronotum usually not reaching tips of tegmina 67
- 67 (66) Ocelli extremely large (Text-fig. 127). Posterior apex of pronotum terminating well before tips of tegmina (Text-fig. 46) *deplumis* sp. n. (p. 373)
- Ocelli not unusually large (Text-fig. 110). Posterior apex of pronotum reaching or nearly reaching tips of tegmina 68
- 68 (67) Tegmen with basal areas of basal and sub-basal cells coriaceous and punctate, pale yellowish (Text-fig. 42). U.S.A. *lycioda* Ball (p. 419)
- Tegmen with basal areas not as above. South America 69
- 69 (68) Head with width slightly more than twice length. Tegmen with apical limbus very narrow, second discoidal cell slightly smaller than second apical cell (Text-fig. 66) *triviale* sp. n. (p. 384)
- Head with width less than twice length. Tegmen with apical limbus broad, second discoidal cell very much larger than second apical cell (Text-fig. 65) *singularis* sp. n. (p. 391)

KEY TO SPECIES OF *AMASTRIS*

(Based on male genitalia)

It has not been possible to examine males of the following species, which are therefore omitted from this key: *arquata*, *compacta*, *consanguinea*, *discreta*, *fallax*, *elevata*, *panamensis*, *peruviana*, *projecta*, *revelata*, *sabulosa*, *simillima*, *straminea* and *sulphurea*.

- 1 Aedeagus U-shaped, shaft vertical 2
- Aedeagus not U-shaped, shaft horizontal 50
- 2 (1) Aedeagus with shaft not greatly expanded subapically. Paramere simple 3.
- Shaft of aedeagus with very pronounced expansion subapically (Text-fig. 261). Paramere with large flap-like membrane on distal process (Text-fig. 313) *dissimilis* sp. n. (p. 364)

- 3 (2) Shaft with subapical spines on anterior and/or lateral surfaces; gonopore subapical on posterior surface 5
- Shaft without spines on anterior surface, if present on lateral surfaces then very small; gonopore apical 4
- 4 (3) Shaft with a few scattered spines along length of posterior surface; without basal processes (Text-fig. 207) *obregens* Fabricius (p. 365)
- Shaft with numerous very small spines on lateral surfaces; with a distinct process arising near base on each side of posterior surface (Text-fig. 209) 49
- 5 (3) Shaft with from two to six spines subapically on anterior surface 6
- Shaft with more than six spines subapically on anterior surface 9
- 6 (5) Shaft with four or six spines subapically on anterior surface 7
- Shaft with two spines on anterior surface, or a single spine on each lateral surface 8
- 7 (6) Shaft with four very large spines subapically (Text-fig. 213). Paramere with basal process tapering *knighiti* sp. n. (p. 372)
- Shaft with six spines subapically (Text-fig. 215). Paramere with basal process spatulate *deplumis* sp. n. (p. 373)
- 8 (6) Shaft with two very large subapical spines on anterior surface (Text-fig. 214) *unica* sp. n. (p. 374)
- Shaft with a single subapical spine on each lateral surface (Text-fig. 217) *minuta* Funkhouser (p. 375)
- 9 (5) Shaft with two vertical rows of spines on subapical half of anterior surface separated by a narrow flap-like membrane (Text-fig. 219) *fasciata* sp. n. (p. 375)
- Shaft not as above, without membrane 10
- 10 (9) Shaft with spines arranged in a circle subapically on anterior surface; two of them very acutely pointed (Text-figs 223, 274) *lycioda* Ball (p. 419)
- Shaft with spines not as above 11
- 11 (10) Shaft with a single row of spines subapically on anterior surface (Text-fig. 279) 12
- Shaft with more than a single row of spines, or a dense cluster of spines subapically on anterior surface (Text-figs 289, 293) 16
- 12 (11) Shaft with spines large, few in number (Text-fig. 224) 13
- Shaft with spines very small, numerous (Text-fig. 221). *inclinata* sp. n. (p. 379)
- 13 (12) Shaft with spines extending basad for more than half length of anterior surface (Text-fig. 278) *exigua* sp. n. (p. 379)
- Shaft with spines extending basad for much less than half length of anterior surface (Text-fig. 224) 14
- 14 (13) Shaft in posterior aspect approximately parallel-sided, not expanded apically (Text-fig. 279) *subangulata* sp. n. (p. 378)
- Shaft in posterior aspect constricted at midlength, expanded apically (Text-fig. 278) 15
- 15 (14) Shaft with less than ten subapical spines (Text-fig. 275). Paramere with basal process becoming gradually expanded towards truncate apex (Text-fig. 324) *brunneipennis* Funkhouser (p. 380)
- Shaft with approximately fifteen subapical spines (Text-fig. 278). Paramere with basal process broadly spatulate (Text-fig. 331) *exaltata* Walker (p. 376)
- 16 (11) Aedeagus with a double row of spines subapically across anterior surface of shaft 17
- Aedeagus with spines either in three rows or in a dense cluster. 25
- 17 (16) Shaft with spines extending basad for more than half length of anterior surface 18
- Shaft with spines extending basad for distinctly less than half length of anterior surface 19
- 18 (17) Shaft expanded apically in lateral aspect; spines on anterolateral surfaces, irregularly spaced, extending basad for slightly more than half length of anterior surface (Text-fig. 226) *robusta* sp. n. (p. 381)

- Shaft not expanded apically; spines on posterolateral surfaces, regularly spaced, extending basad for three-quarters length of anterior surface (Text-fig. 227) *fonsecai* sp. n. (p. 382)
- 19 (17) Spines on shaft extending basad for less than one-quarter length of anterior surface (Text-fig. 230) 20
- Spines on shaft extending basad for more than one-third length of anterior surface 22
- 20 (19) Paramere with basal process tapering; distal process acutely pointed (Text-fig. 332) 21
- Paramere with basal process approximately parallel-sided, apex truncate; distal process blunt (Text-fig. 350) *alapigmentata* sp. n. (p. 383)
- 21 (20) Paramere with approximately eight spines on distal process; apex of basal process angled dorsally (Text-fig. 332) *triviale* sp. n. (p. 384)
- Paramere with approximately sixteen spines on distal process; basal process straight (Text-fig. 334) *punctata* sp. n. (p. 384)
- 22 (19) Shaft of aedeagus with subical spines blunt, few in number (Text-fig. 231) 23
- Shaft with subapical spines acutely pointed, numerous (Text-fig. 229) 24
- 23 (22) Paramere with basal process tapering towards apex; spines on distal process short (Text-fig. 336) *froeschneri* sp. n. (p. 385)
- Paramere with basal process spatulate; spines on distal process long (Text-fig. 339) *angulata* sp. n. (p. 386)
- 24 (22) Shaft in posterior aspect with length six times maximum breadth; gonopore small (Text-fig. 287). Basal apodeme with length nearly three times maximum width (Text-fig. 229) *vicina* sp. n. (p. 387)
- Shaft in posterior aspect with length four times maximum breadth; gonopore large (Text-fig. 288). Basal apodeme with length not more than twice maximum width (Text-fig. 234) *finitima* sp. n. (p. 388)
- 25 (16) Aedeagus with spines on shaft arranged in three distinct transverse rows on anterior surface (Text-fig. 289) 26
- Aedeagus with spines on shaft arranged in a dense cluster on anterior surface (Text-fig. 293) 27
- 26 (25) Aedeagus in lateral aspect with apodeme much broader basally than base of shaft (Text-fig. 235). Paramere with recurved apex of distal process as long as broad (Text-fig. 345) *pseudoelevata* sp. n. (p. 388)
- Aedeagus in lateral aspect with apodeme no broader basally than base of shaft (Text-fig. 236). Paramere with recurved apex of distal process broader than long (Text-fig. 347) *inconspicua* sp. n. (p. 389)
- 27 (25) Shaft with spines extending basad for more than two-thirds length of anterior surface 28
- Shaft with spines extending basad for less than two-thirds length of anterior surface 29
- 28 (27) Shaft in lateral aspect approximately one-sixth width of basal apodeme; slightly curved anteriorly at apex. Basal apodeme massive (Text-fig. 237) *obscura* sp. n. (p. 390)
- Shaft in lateral aspect more than one-third maximum width of basal apodeme; straight. Basal apodeme not unusually large (Text-fig. 238) *singularis* sp. n. (p. 391)
- 29 (27) Spines on shaft extending basad for less than half length of anterior surface 30
- Spines on shaft extending basad for at least half length of anterior surface 41
- 30 (29) Shaft with spines extending basad for less than one-fifth length of anterior surface (Text-fig. 240) 31
- Shaft with spines extending basad for at least one-quarter length of anterior surface (Text-fig. 242) 32
- 31 (30) Aedeagus with shaft as long as basal apodeme. Paramere with dorsal exten-

- sion of distal process three times as long as maximum width (Text-fig. 354)
- *undulata* sp. n. (p. 392)
- Aedeagus with shaft longer than basal apodeme. Paramere with dorsal extension of distal process less than twice as long as maximum width (Text-fig. 338)
- viridisparsa* sp. n. (p. 392)
- 32 (30) Shaft with spines extending basad of lower margin of gonopore (Text-fig. 243) 33
- Shaft with spines not extending basad of lower margin of gonopore (Text-fig. 248) 37
- 33 (32) Shaft in lateral aspect more than half maximum width of basal apodeme (Text-fig. 241) *reclusa* sp. n. (p. 394)
- Shaft in lateral aspect less than half maximum width of basal apodeme 34
- 34 (33) Shaft curving anteriorly, apex converging with basal apodeme (Text-fig. 243)
- evexa* sp. n. (p. 396)
- Shaft and basal apodeme parallel or diverging 35
- 35 (34) Shaft distinctly longer than basal apodeme (Text-fig. 242) *flava* sp. n. (p. 393)
- Shaft not longer than basal apodeme 36
- 36 (35) Shaft with spines extending basad for more than one-third length of anterior surface; maximum width of basal apodeme in lateral aspect four times that of shaft (Text-fig. 250) *specialis* sp. n. (p. 400)
- Shaft with spines extending basad for less than one-third length of anterior surface; maximum width of basal apodeme in lateral aspect approximately three times that of shaft (Text-fig. 251) *melina* sp. n. (p. 401)
- 37 (32) Shaft distinctly longer than basal apodeme (Text-fig. 245)
- guttata* Fonseca (p. 395)
- Shaft not longer than basal apodeme 38
- 38 (37) Shaft in lateral aspect half maximum width of basal apodeme (Text-fig. 247)
- pseudomaculata* sp. n. (p. 399)
- Shaft in lateral aspect more than half maximum width of basal apodeme 39
- 39 (38) Paramere with basal process expanded, spatulate (Text-fig. 344)
- conspicua* sp. n. (p. 398)
- Paramere with basal process approximately parallel-sided 40
- 40 (39) Aedeagus with dorsal apex of basal apodeme inclined anteriorly (Text-fig. 244)
- affinis* sp. n. (p. 397)
- Aedeagus with dorsal apex of basal apodeme not inclined anteriorly (Text-fig. 248) *notata* sp. n. (p. 398)
- 41 (29) Aedeagus in lateral aspect with shaft approximately as broad as basal apodeme 42
- Aedeagus in lateral aspect with shaft distinctly narrower than basal apodeme 43
- 42 (41) Aedeagus with shaft longer than basal apodeme; approximately parallel-sided in posterior aspect (Text-fig. 311). South America *depressa* sp. n. (p. 402)
- Aedeagus with shaft not longer than basal apodeme; constricted subapically in posterior aspect (Text-fig. 307). U.S.A. *templa* Ball (p. 420)
- 43 (41) Paramere with basal process very slender basally, becoming much expanded towards apex (Text-fig. 364) *funkhouseri* Haviland (p. 404)
- Paramere with basal process either parallel-sided or tapering from base to apex 44
- 44 (43) Basal process of paramere tapering, apex acutely pointed (Text-fig. 351)
- janae* sp. n. (p. 405)
- Basal process of paramere approximately parallel-sided, apex rounded 45
- 45 (44) Aedeagus with shaft distinctly longer than basal apodeme 46
- Aedeagus with shaft not longer than basal apodeme 47
- 46 (45) Distal process of paramere with more than twelve spines (Text-fig. 365)
- inermis* sp. n. (p. 407)
- Distal process of paramere with less than ten spines (Text-fig. 348)
- sakakibarae* sp. n. (p. 408)
- 47 (45) Paramere with basal process twice length of distal process (Text-fig. 359) 48

- Paramere with basal process less than twice length of distal process (Text-fig. 360) *maculata* Funkhouser (p. 406)
- 48 (47) Basal process of paramere approximately straight, apex obtusely rounded (Text-fig. 363) *gregaria* sp. n. (p. 403)
- Basal process of paramere sinuate, apex obliquely angled (Text-fig. 359) *inornata* sp. n. (p. 404)
- 49 (4) Aedeagus with basal apodeme almost parallel-sided, six times as long as maximum breadth; lateral processes on shaft vertical, more than five times longer than wide (Text-fig. 208) *concolor* sp. n. (p. 366)
- Aedeagus with basal apodeme expanded at midlength, less than three times as long as maximum breadth; lateral processes on shaft curving posteriorly, as broad as long (Text-fig. 209) *vitallina* sp. n. (p. 367)
- 50 (1) Shaft with a pair of lateral processes subapically 51
- Shaft with two pairs of lateral processes, one apically and the other subapically (Text-fig. 211) *dama* sp. n. (p. 368)
- 51 (50) Shaft with a pair of bifid, heavily chitinated lateral processes subapically, without spines 52
- Shaft with a pair of blunt, non-bifurcate processes apically, with numerous small spines 53
- 52 (51) Shaft with scattered small spines subapically on dorsal surface; basal apodeme less than half length of shaft (Text-fig. 210) *ramosa* sp. n. (p. 369)
- Shaft with dorsal surface smooth; basal apodeme distinctly more than half length of shaft (Text-fig. 212) *interstincta* sp. n. (p. 369)
- 53 (51) Shaft with spines on posteroventral surfaces of apical processes only; basal apodeme six times as long as maximum breadth (Text-fig. 216) *flavifolia* Funkhouser (p. 370)
- Shaft with spines on both posteroventral and anteroventral surfaces of apical processes; basal apodeme nearly twice as broad as long (Text-fig. 218) *vismiae* Haviland (p. 371)

DESCRIPTIONS OF THE SPECIES

Amastris dissimilis sp. n.

(Text-figs 43, 104, 174, 206, 261, 313)

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.7 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 1.9 mm, length of pronotum 3.9 mm, maximum height of pronotum 1.4 mm, length of tegmen 3.3 mm. Female: slightly larger than male, length of pronotum 4.2 mm, maximum height of pronotum 1.6 mm.

Head with vertex indistinctly ridged and punctate; medial groove indistinct. Ocelli prominent, very much closer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending for less than one-third its length beyond lower margins of vertex; basal and lateral margins indistinct. Rostrum reaching to hind coxae.

Pronotum nearly three times as long as high; sides shallowly and obscurely indented immediately posterior to humeral angles, centrally, and in posterior third; posterior apex acute, not reaching tips of tegmina. Metopidium wider than high, regularly curved posteriorly from base to smooth junction with dorsum; median carina obscure basally, becoming prominent towards dorsum. Dorsum with maximum height at approximately one-quarter its length posterior to humeral angles; median carina keel-like.

Tegmen with second discoidal cell slightly larger than first apical cell, distinctly larger than each of second, third, and fourth apicals, not reaching costal margin; fifth apical cell not entirely

concealed by pronotum; subcostal cell weakly coriaceous and sparsely punctate over basal two-fifths; apical limbus broad; veins distinct.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, coriaceous areas and veins of tegmen, dull, pale greenish yellow, median carina on dorsum very narrowly edged with black; cells of tegmen clear hyaline; exposed part of apical limbus dark brown.

Male genitalia with aedeagus U-shaped; shaft directed vertically, longer than basal apodeme, strongly expanded laterally near apex in posterior aspect; with a row of very large, ventrally directed, heavily chitinized spines on margins of expansion; gonopore very large, situated subapically on posterior surface; basal apodeme basally much narrower than shaft in lateral aspect, broader centrally, apex tapering. Paramere with distal process one-third total length; approximately seven short spines on dorsal surface and four similar spines apically; a large dorsal membrane extending from immediately anterior to apex to medial apodeme; basal process narrow basally, greatly expanded towards very obtusely rounded apex.

Immediately distinguished from the other species of the genus by the unique structure of aedeagus and paramere.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Mato Grosso, gallery forest, 12°49' S 51°45' W, 2.i.1969 (*Knight*) (BMNH).

Paratype. BRAZIL: 1 ♀, data as holotype (BMNH).

Type-series collected on Royal Society / Royal Geographical Society Xavantina / Cachimbo Expedition 1967-69.

Amastris obtegens (Fabricius)

(Text-figs 26, 95, 207, 262, 316)

Membracis obtegens Fabricius, 1803 : 25. Holotype ♂, locality not known (UZM, Copenhagen) [examined].

Thelia obtegens (Fabricius) Walker, 1851 : 563.

Amastris obtegens (Fabricius) Stål, 1869 : 25.

Length of pronotum: male 4.8-6.0 mm, female 4.9-6.0 mm; maximum height of pronotum: male 2.2-2.7 mm, female 2.2-2.8 mm.

Male: width of vertex excluding eyes 1.4 mm, width of vertex including eyes 2.3 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.8 mm, length of pronotum 6.0 mm, maximum height of pronotum 2.7 mm, length of tegmen 4.5 mm. Female: very slightly larger than male, proportionately similar.

Head with vertex very obscurely punctate, finely and indistinctly ridged; medial groove distinct basally, becoming obscure at level of ocelli. Ocelli prominent, slightly closer to the eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending for one-sixth its length beyond lower margins of vertex, lateral margins distinct. Rostrum reaching to hind coxae.

Pronotum slightly more than twice as long as high, sides without indentations; posterior apex acute, nearly reaching tips of tegmina. Metopidium nearly as high as wide, inclined forwards from base, then curving smoothly to junction with dorsum; median carina indistinct basally, becoming highly elevated towards junction with dorsum. Dorsum with maximum height immediately posterior to humeral angles; median carina keel-like.

Tegmen with second discoidal cell approximately as large as each of first and second apical cells, not reaching to costal margin; third apical cell very small; fifth almost completely hidden by side of pronotum; subcostal cell coriaceous and punctate over basal four-fifths; veins distinct.

Head and pronotum pale yellowish brown, dull, unmarked, median carina very narrowly edged with black; ventral surfaces of vertex, abdomen, legs, and most of exposed part of tegmen dark brown, almost black; basal cell of tegmen pale hyaline, adjacent veins and internal angle of coriaceous part of anal area concolorous with pronotum.

Male genitalia with aedeagus U-shaped; shaft directed vertically, much shorter than basal apodeme; robust in lateral aspect, nearly as broad as basal apodeme, very slender in posterior aspect; a double row of irregularly spaced decurved spines running almost whole length of posterior surface of shaft, approximately eight spines in each row, those in basal half of shaft very large; gonopore small, apical. Paramere with distal process approximately one half total length; a few short spines on lateral surfaces; more numerous and much longer spines on dorsal surface; basal process almost parallel-sided, apex acute.

This species is distinguished by the highly elevated pronotum, the dense pigmentation of the tegmen, and the unique arrangement of the spines on the aedeagus.

MATERIAL EXAMINED.

Holotype ♂, locality unknown, collector unknown (UZM, Copenhagen).

GUYANA: 5 ♂, 14 ♀, Kartabo, vii.1922 (*Haviland*) (BMNH); 1 ♀, N.W. District, Wanaina, iii.1931 (*Myers*) (BMNH).

This species is also recorded from Mexico, Panama, Brazil, Colombia, Costa Rica, Ecuador, and Peru (Metcalf, 1965: 875). It has frequently been confused with *elevata* and others, and the validity of previous records is consequently doubtful.

Amastris concolor sp. n.

(Text-figs 32, 92, 167, 208, 263, 318)

Length of pronotum: male 5.0–5.5 mm, female 5.2–5.2 mm; maximum height of pronotum: male 2.2–2.4 mm; female 2.2–2.4 mm.

Male: width of vertex excluding eyes 1.2 mm, width of vertex including eyes 2.0 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.2 mm, length of pronotum 5.5 mm, maximum height of pronotum 2.4 mm, length of tegmen 4.1 mm. Female: slightly larger than male, dorsum somewhat more elevated.

Head with vertex almost flat, finely wrinkled and obscurely punctate, medial groove indistinct. Ocelli small, inconspicuous, slightly nearer to eyes than to each other, situated well below centro-ocular line. Frontoclypeus extending for one-fifth its length beyond lower margins of vertex, basal and lateral margins indistinct. Rostrum reaching hind coxae.

Pronotum slightly more than twice as long as high, sides without indentations, posterior apex reaching to near tips of tegmina. Metopidium nearly as high as wide, inclined forwards from base, then curving posteriorly to smooth junction with dorsum; median carina low near base, becoming more prominent towards dorsum. Dorsum with maximum height between humeral angles and mid-length; median carina very highly elevated, keel-like.

Tegmen with second discoidal cell approximately as large as each of first and second apical cells, not reaching to costal margin; third apical cell small; fifth apical completely concealed by pronotum; subcostal cell weakly coriaceous and punctate over basal four-fifths; veins not prominent.

Head, pronotum, lateral and dorsal surfaces of abdomen, and coriaceous areas and veins of tegmen pale brownish yellow; ocelli concolorous with vertex; lateral margins of vertex between ocelli and eyes sometimes mottled reddish brown; median carina on dorsum narrowly edged with black; legs pale brown basally, becoming darker towards apices of tibiae, tarsi pale, claws darker.

Male genitalia with aedeagus slender, U-shaped; shaft curving slightly posteriorly, much shorter than basal apodeme; two small lateral expansions subapically; numerous small spines laterally at mid length; a long, slender, vertically directed process arising near base on each postero-lateral surface; gonopore small, situated apically on posterior surface; basal apodeme six times as long as its maximum width. Paramere robust; distal process almost half total length; eight large spines on dorsal and posterior surfaces; basal process slender, almost parallel-sided, apex acute.

A relatively large species with the pronotum highly elevated. It is distinguished by the very unusual form of the aedeagus which sets it, and the closely related *vitallina*, apart from the other species of the genus.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: São Paulo, Pargue, Jabaguera, ix.1931 (*Fonseca*) (MZUSP, São Paulo).

Paratypes. BRAZIL: 1 ♀, Pará, Maué, iv.1940 (*Fonseca*) (MZUSP); 1 ♀, Pará, Obidos, 1940 (*Fonseca*) (BMNH); 1 ♂, Nova Teutonia, 1939 (*Plauman*) (BMNH).

Amastris vitallina sp. n.

(Text-figs 24, 85, 159, 209, 264, 320)

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.8 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.9 mm, length of pronotum 4.6 mm, maximum height of pronotum 1.8 mm, length of tegmen 3.7 mm. Female: very similar to male, length of pronotum 4.5 mm, maximum height of pronotum, 1.8 mm.

Head with vertex very obscurely and irregularly ridged and punctate; medial groove becoming indistinct at level of ocelli. Ocelli prominent, slightly closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for one-quarter its length beyond lower margins of vertex, basal margins indistinct. Rostrum reaching hind coxae.

Pronotum with length two and a half times maximum height, without lateral indentations; posterior apex acute, reaching to near tips of tegmina. Metopidium one and a half times as wide as high, slightly inclined forwards from base then curving posteriorly to smooth junction with dorsum; medial carina becoming highly elevated between midlength and junction with dorsum. Dorsum with maximum height immediately posterior to humeral angles; median carina keel-like.

Tegmen with second discoidal cell approximately equal in size to third apical cell, smaller than each of first and second apicals, not reaching costal margin; fifth apical cell not completely covered by pronotum; subcostal cell coriaceous and densely punctate over basal three-quarters; apical limbus relatively narrow; veins narrow, distinct.

Head, pronotum, ventral surfaces of thorax, legs, abdomen, veins and coriaceous areas of tegmen yellowish brown, unmarked; median carina on dorsum broadly edged with black; cells of tegmen clear hyaline; apical limbus narrowly edged with dark brown; apices of fore and middle tibiae and tarsal claws brown.

Male genitalia with aedeagus complex, U-shaped; shaft directed vertically, distinctly shorter than basal apodeme, very slender, curving slightly posteriorly; a pair of short, blunt, posteriorly directed basal processes; two small lateral projections subapically; numerous very small blunt spines over apical half of posterolateral surfaces; gonopore very small, apical. Paramere very large, robust; distal process only one-quarter total length; eleven long spines subapically on dorsal and posterior surfaces; basal process massive, expanding gradually from base to very obtusely rounded, spatulate apex.

This species is distinguished by the very distinctive male genitalia. It is closely related to *concolor*, and quite distinct from all other species of the genus.

MATERIAL EXAMINED.

Holotype ♂, FRENCH GUIANA: Guyane, Maroni (*Le Moult*) (NSCU, Raleigh).

Paratype. FRENCH GUIANA: 1 ♀, data as holotype (BMNH).

Amastris dama sp. n.

(Text-figs 49, 122, 182, 211, 265, 315)

Length of pronotum: male 3.2–3.4 mm, female 3.4–3.8 mm; maximum height of pronotum: male 1.1–1.2 mm, female 1.2–1.4 mm.

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.7 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 1.9 mm, length of pronotum 3.4 mm, maximum height of pronotum 1.2 mm, length of tegmen 3.4 mm. Female: slightly larger than male, proportionately similar.

Head with vertex distinctly punctate; medial groove distinct throughout its length. Ocelli small, prominent, one and a half times as far from each other as from eyes, situated well below centro-ocular line. Frontoclypeus extending for almost half its length beyond lower margins of vertex, basal and lateral margins distinct. Rostrum reaching beyond hind coxae.

Pronotum three and a third times as long as high; sides shallowly indented centrally and immediately posterior to level of humeral angles; posterior apex acute, terminating well before tips of tegmina. Metopidium twice as wide as high, curving posteriorly from base to smooth junction with dorsum; median carina low, distinct, becoming highly elevated near junction with dorsum. Dorsum with maximum height at one-fifth distance from metopidium to apex; median carina keel-like.

Tegmen with second discoidal cell approximately as large as first apical cell, not reaching costal margin; second apical cell slightly larger; fifth apical not completely concealed by pronotum; subcostal cell weakly coriaceous and sparsely punctate over basal three-quarters; apical limbus broad; veins distinct.

Head, pronotum, ventral surface of thorax, legs, and coriaceous areas of tegmen pale yellowish brown; pronotum with an indistinct area centrally and a transverse band subapically paler; abdomen pale pink; ocelli, base of head, and base of metopidium often deep pink; veins of tegmen frequently unpigmented; cells and limbus unpigmented.

Male genitalia with aedeagus complex; shaft horizontal, posteriorly directed; two long, dorsally directed, coarsely serrate processes apically; two long, anteroventrally directed processes subapically on ventral surface converging medially; numerous, very small spines basally on dorsal surface; gonopore apical, between bases of apical processes. Basal apodeme greatly reduced, vertical. Paramere with distal process almost half total length, much broader than basal process; apex narrowly recurved; approximately seven short spines on dorsal surface arising from a subapical flap-like membrane; two much longer spines on posterior surface; basal process very slender, almost parallel-sided, apex acute.

This species is distinguished by the unique form of the aedeagus.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Mato Grosso, gallery forest, 12°49' S – 51°45' W, 9.i.1969 (*Knight*) (BMNH).

Paratypes. BRAZIL: 2 ♂, 12 ♀, data as holotype (BMNH).

The type-series was collected on the Royal Society / Royal Geographical Society Xavantina / Cachimbo Expedition 1967–69.

Amastris ramosa sp. n.

(Text-figs 35, 96, 190, 210, 266, 321)

Length of pronotum: male 4.4–4.8 mm, female 4.5–4.7 mm; maximum height of pronotum: male 1.9–2.1 mm, female 1.9–2.2 mm.

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.9 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.4 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.2 mm, length of pronotum 4.8 mm, maximum height of pronotum 1.9 mm, length of tegmen 3.8 mm. Female: similar to male in size and proportions.

Head with vertex almost flat, very finely ridged, punctuation obscure; medial groove distinct basally, becoming obsolete towards junction with frontoclypeus. Ocelli distinct, slightly nearer to the eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for a quarter its length beyond lower margins of vertex; lateral margins distinct, becoming obscure towards base. Rostrum reaching to hind coxae.

Pronotum two and a half times as wide as long, sides without indentations, reaching tips of tegmina. Metopidium a little wider than high, slightly inclined forward from base, then curving posteriorly to smooth junction with dorsum; median carina arising near base, highly elevated from midlength to dorsum. Dorsum with maximum height immediately posterior to humeral angles; median carina keel-like.

Tegmen with second discoidal cell as large as first apical, not reaching to costal margin; second and third apical cells smaller; fifth apical completely concealed by pronotum; subcostal cell coriaceous and punctate over basal three-quarters; veins distinct.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, veins and coriaceous area of tegmen pale brownish yellow, unmarked; ocelli shining, yellow; median carina of pronotum narrowly edged with black; tegmen with apical limbus, third apical cell and posterior part of fourth apical pale brownish hyaline, rest of tegmen unpigmented.

Male genitalia with aedeagus robust; shaft horizontal; a pair of laterally directed bifid processes subapically; a row of small, lightly chitinized, spines subapically on dorsal surface; gonopore apical on posteroventral surface. Paramere with distal process approximately half total length; approximately twelve spines on dorsal and posterior surfaces; basal process broad, almost-parallel sided, apex rounded.

This species, externally very similar to *vismiae*, is most easily distinguished from that species by the structure of the aedeagus. On genitalic characters it is most closely related to *interstincta*, from which it may be distinguished by the more highly elevated pronotum.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Para, Belem, iv.1954 (*Fonseca*) (MZUSP).

Paratypes. BRAZIL: 1 ♂, 6 ♀, data as holotype (MZUSP); 1 ♂, 4 ♀, data as holotype (BMNH). VENEZUELA: 1 ♂, Mt Duida, 6.iii.1929 (AMNH, New York.)

Amastris interstincta sp. n.

(Text-figs 56, 119, 200, 212, 268, 323)

Length of pronotum: male 4.2–4.6 mm; maximum height of pronotum 1.6–1.7 mm.

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.9 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.4 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.2 mm, length of pronotum 4.6 mm, maximum height of pronotum 1.7 mm, length of tegmen 3.7 mm.

Female unknown.

Head with vertex finely ridged, irregularly and obscurely punctate; medial groove obsolete. Ocelli prominent, slightly closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for one-fifth its length beyond lower margins of vertex, basal margins indistinct. Rostrum reaching hind coxae.

Pronotum with length more than two and one half times maximum height; without lateral indentations; posterior apex acute, reaching to near tips of tegmina. Metopidium one and a half times as wide as high, rising vertically from base, then curving posteriorly to smooth junction with dorsum; median carina gradually becoming elevated towards dorsum. Dorsum with maximum height at one-sixth distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell approximately equal in size to first apical cell, slightly larger than second apical, much larger than third apical, not reaching costal margin; fourth apical cell partially covered by pronotum; fifth apical entirely concealed; subcostal cell heavily coriaceous and densely punctate over basal four-fifths; apical limbus broad; veins distinct.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, coriaceous areas and veins of tegmen, pale yellowish brown, unmarked; median carina of dorsum brown, narrowly edged with black; ocelli very narrowly edged with bright scarlet; cells of tegmen clear hyaline, unmarked; exposed part of apical limbus pale brownish hyaline; tarsal claws dark brown.

Male genitalia with aedeagus complex; shaft horizontal; a bifid, heavily chitinized, anteriorly directed, subapical process on each lateral surface; spines absent; gonopore subapical on ventral surface; basal apodeme vertical, length slightly greater than maximum width. Paramere with distal process slightly greater than one-third total length; approximately twelve spines on lateral and dorsal surfaces; basal process very robust, spatulate, obtusely rounded apically.

This species is closely related to *ramosa*, but is distinguished by the structure of the paramere. The form of the aedeagus sets both these species apart from the remainder of the genus.

MATERIAL EXAMINED.

Holotype ♂, GUYANA: Bartica District, Kartabo, 3.vii.1922 (AMNH, New York).

Paratype. GUYANA: 1 ♂, data as holotype (BMNH).

Amastris flavifolia Funkhouser

(Text-figs 3, 80, 142, 216, 269, 325)

[Species described but not named] Stoll, 1788 : 61.

Amastris flavifolia Funkhouser, 1927 : 302. LECTOTYPE ♀, SURINAM (RNH, Leiden), here designated [examined].

Male: width of vertex excluding eyes 1.2 mm, width of vertex including eyes 2.1 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.4 mm, length of pronotum 5.3 mm, maximum height of pronotum 2.3 mm, length of tegmen 4.2 mm. Female: equal in size and proportions to male.

Head with vertex very irregularly ridged and punctate; medial groove distinct basally, becoming obscure at level of ocelli. Ocelli large, distinct, closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for one-quarter its length beyond lower margins of vertex, lateral margins distinct. Rostrum reaching hind coxae.

Pronotum two and a quarter times as long as maximum height, sides without indentations; apex acute, reaching to near tips of tegmina. Metopidium one and a third times as wide as high; straight, slightly inclined forwards from base, then curving posteriorly to smooth junction with dorsum; median carina arising somewhat above base, becoming elevated towards junction

with dorsum. Dorsum with maximum height at one-fifth distance posterior to junction with metopidium; median carina highly elevated.

Tegmen with second discoidal cell smaller than each of first and second apical cells, not reaching costal margin; third apical cell smaller; fifth not completely covered by pronotum; subcostal cell very weakly coriaceous and weakly and sparsely punctate over basal half; veins distinct.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, coriaceous areas and veins of tegmen dull yellowish without markings; cells of tegmen clear hyaline; tarsal claws brown.

Male genitalia with aedeagus complex; shaft vertical near base, then inclined posteriorly; two short, robust, recurved, ventrally directed processes subapically; a row of small, ventrally directed spines on posteroventral surface of each process; three similar spines on exterior-lateral surfaces of each process; gonopore small, situated between bases of apical processes; basal apodeme slender, vertically directed. Paramere with distal process very robust, comprising more than half total length; numerous short spines on lateral and posterior surfaces; five longer spines on dorsal surface; basal process very short, slender.

This species is closely related to *vismiae*, but differs in the rather less elevated pronotum, the very distinctive proportions of the paramere and basal apodeme, and the arrangement of the spines on the shaft of the aedeagus.

The name *flavifolia* has long been credited to Stoll, who first described the species; however, no record of this name has been traced before its appearance in Funkhouser's catalogue (1927: 302); Stoll himself called the species simply 'Het geele Schermblad'. The two specimens in the type-series, however, bear the name *flavifolia* on Blote's determination labels, but no reference can be found in Blote's published work to his use of this name prior to its appearance in Funkhouser's catalogue. It must therefore be assumed that the name *flavifolia* be accredited to Funkhouser (1927).

MATERIAL EXAMINED.

Lectotype ♀, SURINAM (*Calkoen*) (RNH, Leiden).

Paralectotype. AMERICA (RNH, Leiden) [only the pronotum remains of this specimen]. Both these specimens bear H. C. Blote's determination labels.

BRAZIL: 1 ♂, Assu, xii.1912 (*Matausch*) (AMNH, New York). This specimen bears F. W. Goding's determination label.

Amastris vismiae Haviland

(Text-figs 29, 93, 168, 218, 270, 327)

Amastris vismiae Haviland, 1925: 252. Lectotype ♀, GUYANA (BMNH) [examined]. (Lectotype designation by Broomfield, 1971: 385.)

Length of pronotum: male 4.4–4.6 mm, female 4.5–5.5 mm; maximum height of pronotum: male 2.1–2.2 mm, female 1.6–2.7 mm.

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.8 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.0 mm, length of pronotum 4.4 mm, maximum height of pronotum 2.1 mm, length of tegmen 3.6 mm. Female: usually larger than males but similar in proportion.

Head with vertex finely wrinkled, very indistinctly punctate; medial groove basally distinct, becoming obscure towards junction with clypeus. Ocelli small, prominent, slightly closer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus

extending for one-quarter its length beyond lower margins of vertex, basal margins indistinct. Rostrum extending just beyond hind coxae.

Pronotum with length slightly more than twice maximum height, sides without indentations; apex acute, extending to tips of tegmina. Metopidium as wide as high, inclined forwards from base, then curving posteriorly to smooth junction with dorsum; median carina arising near base, becoming highly elevated near mid length to junction with dorsum. Dorsum with maximum height immediately posterior to humeral angles; median carina keel-like.

Tegmen with second discoidal cell approximately equal in size to each of first and second apical cells, not reaching costal margin; third apical cell small; fifth and part of fourth concealed by pronotum; subcostal cell weakly coriaceous and punctate over basal seven-eighths; apical limb broad; veins narrow, often indistinct.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, coriaceous areas and veins of tegmina, pale brownish; median carina often very narrowly edged with black, sides sometimes reddish; veins of tegmen often unpigmented; tarsal claws dark brown; cells of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus complex; shaft directed vertically at base then curving posteriorly; a pair of short, robust, ventrally directed processes subapically; short, ventrally directed heavily chitinized spines on antero- and posteroventral surfaces of processes; two small, weakly-chitinized spines at apex of shaft; gonopore small, between bases of processes; basal apodeme vertical, basal width equal to its length. Paramere with distal process slightly less than half total length, robust; numerous irregularly spaced spines on lateral, dorsal, and posterior surfaces; basal process almost parallel-sided, apex acute, slightly upturned.

This species is closely related to *flavifolia*, but differs in the position of the spines on the subapical processes of the aedeagus, the relative width of the basal apodeme, and the relative length of the basal process of the paramere.

MATERIAL EXAMINED.

Lectotype ♀, GUYANA: Kartabo, viii.1922 (*Haviland*) (BMNH).

Paralectotypes. GUYANA: 3 ♂, 4 ♀ and 2 specimens without abdomens, data as lectotype (BMNH).

Specimens from Brazil have also been examined. The species is recorded from Ecuador (Metcalf, 1965 : 876).

Amastris knighti sp. n.

(Text-figs 55, 117, 201, 213, 271, 322)

Length of pronotum: 4.1–4.2 mm; maximum height of pronotum: 1.4–1.6 mm.

Male: width of vertex excluding eyes 0.9 mm, width of vertex including eyes 1.6 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.7 mm, length of pronotum 4.1 mm, maximum height of pronotum 1.4 mm, length of tegmen 3.2 mm.

Female unknown.

Head with vertex very finely ridged and indistinctly punctate; medial groove indistinct. Ocelli distinct, slightly closer to eyes than to each other, situated immediately below centrocular line. Frontoclypeus extending for slightly more than one-third its length beyond lower margins of vertex; lateral margins distinct. Rostrum reaching to posterior coxae.

Pronotum nearly three times as long as high; sides without indentations; apex acute, not reaching tips of tegmina. Metopidium wider than high, inclined forward from base, then curving posteriorly to smooth junction with dorsum; median carina arising basally, low, dis-

tinct, becoming elevated before junction with dorsum. Dorsum with maximum height immediately posterior to humeral angles; median carina keel-like.

Tegmen with second discoidal cell very much larger than any of first three apical cells, reaching and narrowly occupying costal margin between first and second apicals; fourth apical cell very long and narrow; fifth apical entirely concealed by pronotum; subcostal cell weakly coriaceous over basal quarter, weakly and sparsely punctate over basal three-quarters; apical limbus broad; veins indistinct.

Pronotum, abdomen, coriaceous areas of tegmen, and tarsi pale yellowish; head, ventral surfaces of thorax, coxae and femora, brownish; median carina on dorsum very narrowly edged with black; tegminal cells clear hyaline, without markings; veins very pale yellowish or unpigmented; tibiae and tarsal claws bright scarlet.

Male genitalia with aedeagus U-shaped; shaft slightly longer than basal apodeme, almost as broad as apodeme in lateral aspect, directed vertically; two large anteriorly directed, heavily chitinated spines subapically on each side of anterior surface; gonopore subapical on posterior surface. Paramere with distal process approximately one-third total length, no broader than basal process in lateral aspect; approximately eleven spines irregularly scattered on dorsal, lateral and posterior surfaces; basal process almost parallel-sided; apex upturned, acutely rounded.

This species is not easily identified externally. It is readily distinguished by the arrangement of spines on the aedeagus.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Mato Grosso, 12°50' S 51°47' W, at light, 28.x.1968 (*Richards*) (BMNH).

Paratype. BRAZIL: 1 ♂, Mato Grosso, 12°49' S 51°45' W, gallery forest, 8.xi.1968 (*Knight*) (BMNH).

Both specimens were collected on the Royal Society / Royal Geographical Society Xavantina / Cachimbo Expedition 1967-69.

Amastris deplumis sp. n.

(Text-figs 46, 127, 173, 215, 260, 317)

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.8 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 2.1 mm, length of pronotum 4.0 mm, maximum height of pronotum 1.6 mm, length of tegmen 3.3 mm.

Female unknown.

Head with vertex obscurely punctate; medial groove obscure. Ocelli very large, prominent, closer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal and lateral margins distinct. Rostrum reaching hind coxae.

Pronotum with length two and a half times maximum height, without lateral indentations; apex acute, not reaching tips of tegmina. Metopidium twice as wide as high, curving posteriorly and dorsally from base to smooth junction with dorsum; median carina increasing in height towards junction with dorsum. Dorsum with maximum height at one-quarter its length from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell approximately equal in size to each of first and fourth apical cells, distinctly larger than each of second and third apicals, not reaching costal margin; fifth apical cell not completely concealed by pronotum; subcostal cell coriaceous and punctate over basal three-quarters; apical limbus broad; veins distinct.

Head, pronotum, abdomen, ventral surfaces of thorax, legs, coriaceous areas and veins of tegmen, yellow, unmarked; cells and apical limbus of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft directed vertically, slightly shorter than basal apodeme, as broad as apodeme in lateral aspect; six large closely apposed spines subapically on anterior surface; gonopore subapical on posterior surface. Paramere very slender; distal process slightly less than two-fifths total length; numerous spines of almost uniform length on posterior, lateral, and dorsal surfaces; basal process spatulate apically.

This species is distinguished by the very large ocelli, the lack of dark pigmentation, and the very distinctive form of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, BELIZE: Punta Gordes, iv.1935 (*White*) (BMNH).

Amastris unica sp. n.

(Text-figs 21, 134, 158, 214, 272, 326)

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.7 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.3 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.7 mm, length of pronotum 4.2 mm, maximum height of pronotum 1.5 mm, length of tegmen 3.5 mm. Female: slightly larger than male, pronotum rather more elevated; length of pronotum 4.3 mm, maximum height of pronotum 1.8 mm.

Head with vertex obscurely and irregularly ridged and punctate; medial groove obsolete. Ocelli very small, obscure, slightly closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal and lateral margins distinct. Rostrum reaching hind coxae.

Pronotum with length slightly less than three times maximum height, without lateral indentations; apex acute, reaching to near tips of tegmina. Metopidium with width one and a half times height, slightly inclined forwards from base, then curving posteriorly to smooth junction with dorsum; median carina becoming gradually elevated towards dorsum. Dorsum with maximum height immediately posterior to humeral angles; median carina keel-like.

Tegmen with second discoidal cell larger than each of first three apical cells, reaching and narrowly occupying costal margin between first and second apicals; fifth apical cell not entirely covered by pronotum; subcostal cell weakly coriaceous and punctate over basal two-thirds; apical limbus broad; veins distinct.

Head, pronotum, lateral surfaces of abdomen, veins and coriaceous areas of tegmen dull yellow, unmarked; median carina of dorsum very narrowly edged with black; ventral surfaces of thorax, coxae, and basal abdominal sternites dark brown; tarsi and bases of femora concolorous with pronotum; apices of femora and tibiae pale crimson; tarsal claws brown; cells and apical limbus of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft as long as basal apodeme, inclined slightly posteriorly, as broad as apodeme in lateral aspect; a large, anteriorly directed spine subapically on each anterolateral surface; gonopore subapical on posterior surface. Paramere very slender; distal process slightly more than one-third total length; a few spines on dorsal, lateral, and posterior surfaces; basal process tapering gradually to acute apex.

This species closely resembles *vitallina* externally, especially the females, but the male genitalia are quite distinct.

MATERIAL EXAMINED.

Holotype ♂, FRENCH GUIANA: Guyane, Maroni (*Le Moul*) (NCSU, Raleigh).

Paratype. FRENCH GUIANA: 1 ♀, data as holotype (NCSU).

Amastris minuta Funkhouser sp. rev.

(Text-figs 52, 129, 170, 217, 267, 328)

Amastris minuta Funkhouser, 1922 : 30. Holotype ♂, PERU (USNM, Washington) [examined].

Male: width of vertex excluding eyes 0.9 mm, width of vertex including eyes 1.4 mm, length of vertex to base of clypeus 0.4 mm, width of clypeus 0.4 mm, length of clypeus 0.4 mm, maximum width of pronotum 1.6 mm, length of pronotum 3.2 mm, maximum height of pronotum 1.1 mm, length of tegmen 3.2 mm.

Female unknown.

Head with vertex indistinctly punctate; medial groove distinct basally, becoming obscure towards base of clypeus. Ocelli small, not prominent, nearer to eyes than to each other, situated on or immediately below centro-ocular line. Frontoclypeus extending for less than one quarter its length beyond lower margins of vertex; basal margins indistinct. Rostrum reaching posterior coxae.

Pronotum approximately three times as long as high; sides without indentations; apex rounded in lateral aspect, reaching to near tips of tegmina. Metopidium twice as wide as high, curving posteriorly from base to smooth junction with dorsum; median carina arising near base, distinct, but not highly elevated. Dorsum with maximum height immediately anterior to midlength; median carina not keel-like.

Tegmen with second discoidal cell very large, much larger than first apical cell, reaching costal margin; fourth apical partially covered by pronotum; fifth apical completely concealed; subcostal cell weakly coriaceous and densely punctate over basal three-quarters; veins distinct.

Head, pronotum, abdomen, ventral surfaces of thorax, majority of veins and coriaceous areas of tegmen, and legs pale yellowish brown, unmarked; cells of tegmen clear hyaline with dark brown transverse band across second and fourth apical cells and impinging slightly upon first discoidal and third apical cell, veins within this area brown.

Male genitalia with aedeagus U-shaped; shaft vertical, as long as and nearly as broad as basal apodeme in lateral aspect, slender in posterior aspect; a single large, blunt spine subapically on each side; gonopore subapical on posterior surface. Paramere with distal process nearly half total length; approximately eight long spines on lateral and posterior surfaces; basal process slender basally, spatulate.

A very small species known only from the holotype and distinguished by the tegminal pigmentation and structure of aedeagus.

This species was synonymized with *Thelia citrina* Fairmaire by Goding (1929 : 265); an arrangement which was followed by Metcalf (1956 : 873). There is, however, no proof that this synonymy is correct and *minuta* is thus reinstated as a valid species.

MATERIAL EXAMINED.

Holotype ♂, PERU: Yurimaguas, 31.iii.1920 (USNM, Washington).

Amastris fasciata sp. n.

(Text-figs 38, 98, 189, 219, 273, 319)

Length of pronotum: male 3.6–4.0 mm, female 4.0–4.2 mm; height of pronotum: male 1.3–1.4 mm, female 1.4–1.4 mm.

Male: width of vertex excluding eyes 1.2 mm, width of vertex including eyes 1.75 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 1.8 mm, length of pronotum 4.0 mm, maximum height of pronotum

1.4 mm, length of tegmen 3.6 mm. Female: slightly larger than male, proportionately similar.

Head with vertex finely wrinkled, indistinctly and irregularly punctate; medial groove distinct basally, becoming obscure at level of ocelli. Ocelli distinct, equidistant from each other and from eyes, situated immediately below centro-ocular line. Frontoclypeus extending for almost one-third its length beyond lower margins of vertex; basal and lateral margins distinct. Rostrum reaching hind coxae.

Pronotum with length three times maximum height; sides without indentations; apex acute, not reaching tips of tegmina. Metopidium one and a half times as wide as high, rising almost vertically from base, then curving posteriorly, levelling off very slightly above humeral angles and then rising slightly again to junction with dorsum; median carina low basally, becoming gradually more prominent towards dorsum. Dorsum with maximum height at approximately one-quarter its length from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell approximately as large as first apical cell, reaching costal margin between first and second apical cells; second apical cell smallest; fifth apical very nearly completely concealed by pronotum; subcostal cell coriaceous and punctate over basal three-quarters; apical limbus narrow; veins indistinct.

Head, pronotum, and abdomen yellow; an irregular, narrow, dark brown, vertical band on each side of pronotum from immediately posterior to humeral angles to midline at junction of metopidium and dorsum; median carina narrowly edged with black; ventral surfaces of thorax, coriaceous areas of tegmen, extreme apex of tegmen including limbus, femora, apices of fore and middle tibiae, and tarsal claws dark brown; tegmen with veins pale yellow, cells, except exposed posterior areas of third, fourth, and fifth apicals, clear hyaline, unpigmented.

Male genitalia with aedeagus U-shaped; shaft directed vertically, very slightly longer than basal apodeme; a row of large, slightly hooked spines on each side of shaft over subapical half of anterior surface, the two rows separated by a long, medial membranous flap extending from immediately below apex to just below lower spine; gonopore subapical on posterior surface. Paramere small; distal process two-fifths total length, obtusely recurved apically; numerous small spines on dorsal and lateral surfaces.

This species is closely related to *maculata*, but is distinguished by the pigmentation of the pronotum and the form of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, GUYANA: New River, 4-5.v.1938 (*Hudson*) (BMNH).

Paratypes. GUYANA: 1 ♂, 1 ♀, data as holotype (BMNH); 1 ♀, locality as holotype, 26.iii.-2.iv.1938 (BMNH). BRAZIL: 1 ♀, Para, Jacareacanga, xii.1968 (*Alvarenga*) (MZUSP, São Paulo).

Amastris exaltata (Walker) **comb. n.**

(Text-figs 1, 74, 138, 224, 278, 331)

Thelia exaltata Walker, 1858 : 140. Holotype ♀, BRAZIL (BMNH) [examined].

Gelastogonia exaltata (Walker) Funkhouser, 1927 : 315.

Hille exaltata (Walker) Goding, 1929 : 279.

Length of pronotum: male 5.0-5.6 mm, female 5.7-5.8 mm; maximum height of pronotum: male 2.4-2.8 mm, female, 3.2-3.3 mm.

Male: width of vertex excluding eyes 1.5 mm, width of vertex including eyes 2.2 mm, length of vertex to base of clypeus 0.6 mm, length of clypeus 0.6 mm, width of clypeus 0.6 mm, maximum width of pronotum 2.6 mm, length of pronotum 5.0 mm, maximum height of pronotum 2.4 mm, length of tegmen 4.6 mm. Female: larger than male, pronotum more elevated.

Head with vertex almost flat, weakly and irregularly punctate; medial groove distinct basally, becoming obscure towards junction with base of frontoclypeus. Ocelli very prominent, equidistant from each other and from eyes, situated below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal and lateral margins indistinct. Rostrum reaching to hind coxae.

Pronotum less than twice as long as high, produced anteriorly into a short, vertically directed, apically acute and laterally flattened horn; sides without indentations; apex acutely pointed, slightly decurved. Metopidium much higher from base to tip of horn than broad, vertical or slightly inclined anteriorly from base, then curving slightly posteriorly to junction with dorsum at apex of anterior horn; median carina becoming highly elevated on anterior surface of horn, keel-like on dorsum.

Tegmen with second discoidal cell small, not reaching costal margin; fourth apical cell very long and narrow; fifth apical very large, exceeding combined area of other apical cells together; subcostal cell very weakly coriaceous and weakly and sparsely punctate over basal third; veins, prominent.

Head, pronotum, abdomen, ventral surfaces of thorax, legs, coriaceous areas and veins of tegmen dull, pale brownish yellow; ocelli shining, pale brownish; an irregular brown vertical band on each side of pronotum from base of metopidium above eye to midline just below apex on anterior surface of horn; area of metopidium between vertical bands becoming slightly paler centrally, irregularly mottled with small yellowish spots; a short brown vertical band on each lateral surface of anterior horn, extending from apex for approximately one-third distance to humeral angle; a narrow, vertical pale yellowish stripe between this band and marking on metopidium, concolorous with numerous scattered and indistinct spots posteriorly on sides of pronotum; median carina narrowly and irregularly edged with dark brown; sides of pronotum usually with numerous small, irregularly scattered dark brown spots; cells of tegmen clear hyaline, unmarked; tarsal claws dark brown.

Male genitalia with aedeagus robust, U-shaped; shaft directed vertically, slightly shorter than basal apodeme; a transverse, subapical row of large spines across anterior surface extending briefly down anterolateral surfaces; gonopore large, subapical on posterior surface. Paramere simple, robust; distal process equal to one-third total length; numerous long, strong, erect spines on dorsal and lateral surfaces; basal process expanded apically.

This is a large species with the pronotum very highly elevated and bearing a distinct anterior horn, somewhat more pronounced in the females than in the males. The pigmentation varies slightly, the eyes and ocelli may be pale, concolorous with the vertex, or dark reddish brown, often mottled, while the pale spots on the pronotum vary from being quite distinct to very obscure. The specimen figured (in AMNH, New York) has numerous irregularly scattered dark brown spots on the sides of the pronotum which are absent in the holotype.

MATERIAL EXAMINED.

Holotype ♀, BRAZIL: Santarem (*Bates*) (BMNH).

GUYANA: 1 ♂, Essequibo River, Moraballi Creek, 6.x.1929 (Oxford University Expedition) (BMNH); 1 ♂, Upper Courantyne River, -.ix.1935 (*Hudson*) (BMNH); 1 ♀ Bartica District, Kartabo, 9.iii.1922 (AMNH, New York); 1 ♀, same data except 4.vi.1922 (AMNH).

This species has been previously recorded from Colombia, Ecuador, and Peru (Metcalf, 1965 : 1015).

Amastris subangulata sp. n.

(Text-figs 2, 73, 139, 225, 279, 333)

Length of pronotum: 4.2–4.5 mm; maximum height of pronotum: 1.6–1.7 mm.

Male: width of vertex excluding eyes 1.2 mm, width of vertex including eyes 1.9 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.2 mm, length of pronotum 4.5 mm, maximum height of pronotum 1.7 mm, length of tegmen 3.8 mm.

Female unknown.

Head with vertex finely and indistinctly punctate; medial groove distinct. Ocelli large, prominent, slightly closer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending one-quarter its length beyond lower margins of vertex; basal and lateral margins distinct. Rostrum reaching hind coxae.

Pronotum slightly more than two and a half times as long as high; sides without indentations; apex acute, not reaching tips of tegmina. Metopidium one and a half times as wide as high, rising vertically from base, then curving posteriorly to smooth junction with dorsum; anterior horn at junction of metopidium and dorsum obsolete, median carina arising near base, gradually becoming elevated towards junction with dorsum. Dorsum with maximum height immediately posterior to humeral angles; median carina highly elevated, keel-like.

Tegmen with second discoidal cell approximately equal in size to third apical cell, much smaller than each of first and second apicals, not reaching costal margin; fifth apical not entirely concealed by pronotum; subcostal cell very weakly coriaceous and weakly and sparsely punctate over basal two-fifths; apical limbus broad; veins distinct.

Head, pronotum posterior to humeral angles, abdomen, ventral surfaces of thorax, legs, and coriaceous areas of tegmen, pale yellowish brown; a wide brown band on each side of metopidium from eyes to midline immediately below base of anterior horn, central area of metopidium between these bands mottled with brown and yellow; a short brown band on each side of anterior horn extending for one-quarter distance from median carina to humeral angle; median carina of dorsum narrowly edged with dark brown; cells of tegmen clear hyaline; veins brownish, slightly darker than pronotum; apical limbus tinged brownish; tarsal claws reddish brown.

Male genitalia with aedeagus U-shaped; shaft as long as basal apodeme, as broad as apodeme in lateral aspect; a transverse, subapical row of approximately eleven large spines across anterior surface, extending very slightly ventrally on lateral surfaces; gonopore subapical on posterior surface. Paramere with distal process one-third total length, apex strongly recurved; numerous small spines on anterior, lateral, and posterior surfaces; basal process very robust, apex greatly expanded, obtuse.

This species is distinguished by the obsolete anterior horn and the pigmentation of the anterior part of the pronotum. It is closely related to *angulata*, *exaltata*, and *punctata*.

MATERIAL EXAMINED.

Holotype ♂, GUYANA: New River, 4–5.v.1938 (*Hudson*) (BMNH).

Paratype. GUYANA: 1 ♂, Essequibo River, Moraballi Creek, Wallaba Forest, 19.x.1929 (*Oxford University Expedition*) (BMNH).

Amastris inclinata sp. n.

(Text-figs 20, 136, 140, 221, 277, 335)

Male: width of vertex excluding eyes 0.9 mm, width of vertex including eyes 1.4 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.5 mm, length of pronotum 3.6 mm, maximum height of pronotum 1.2 mm, length of tegmen 3.0 mm.

Female unknown.

Head with vertex very obscurely punctate; medial groove distinct throughout. Ocelli large, prominent, slightly closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for almost one-third its length beyond lower margins of vertex, lateral margins distinct. Rostrum reaching hind coxae.

Pronotum with length three times maximum height, without lateral indentations; apex acutely rounded in lateral aspect, reaching to near tips of tegmina. Metopidium slightly wider than high, inclined anteriorly from base for most of its length, then curving sharply posteriorly to smooth junction with dorsum; median carina low, becoming elevated immediately prior to junction with dorsum. Dorsum with maximum height at one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell larger than each of first four apical cells, partially covered by pronotum, narrowly reaching costal margin between first and second apical cells; fifth apical cell entirely concealed by pronotum; subcostal cell weakly coriaceous and punctate over basal third; apical limbus relatively narrow; veins indistinct.

Head, pronotum, abdomen, ventral surfaces of thorax, legs, veins and coriaceous areas of tegmen, pale yellowish brown, unmarked; cells and limbus of tegmen clear hyaline, unmarked; tarsal claws reddish.

Male genitalia with aedeagus U-shaped; shaft directed vertically, longer than basal apodeme, more than half maximum breadth of apodeme in lateral aspect, a transverse subapical row of very small spines on anterior surface, extending ventrally for short distance on anterolateral surfaces; gonopore subapical on posterior surface. Paramere extremely slender; distal process slightly more than one-third total length; apex weakly chitinized with a few small spines on posterior and lateral surfaces; basal process slender basally, becoming greatly expanded and spatulate towards apex.

This species is distinguished by the angle of the metopidium in lateral aspect, and by the structure of the paramere. The aedeagus shows a possible affinity with *exigua* and *brunneipennis*.

MATERIAL EXAMINED.

Holotype ♂, VENEZUELA: Mt Duida, 6.iii.1929 (AMNH, New York).

Amastris exigua sp. n.

(Text-figs 48, 113, 169, 222, 276, 314)

Length of pronotum: 3.1–3.2 mm; maximum height of pronotum: 0.9–1.0 mm.

Male: width of vertex excluding eyes 0.9 mm, width of vertex including eyes 1.4 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.3 mm, width of clypeus 0.3 mm, maximum width of pronotum 1.6 mm, length of pronotum 3.2 mm, maximum height of pronotum 1.0 mm, length of tegmen 2.8 mm.

Female unknown.

Head with vertex obscurely and irregularly punctate, medial groove distinct basally, becoming obscure towards junction with clypeus. Ocelli large, prominent, much closer to

eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for one-quarter its length beyond lower margins of vertex, lateral margins distinct. Rostrum reaching mid coxae.

Pronotum with length three times maximum height; sides without indentations; apex acute, not reaching tips of tegmina. Metopidium twice as wide as high, curving regularly from base to smooth junction with dorsum; median carina low basally, gradually becoming more elevated towards dorsum. Dorsum with maximum height one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell slightly larger than fourth apical cell, much larger than each of first three apicals; reaching costal margin broadly between first and second apicals; fifth apical cell not entirely concealed by pronotum; subcostal cell weakly coriaceous and punctate over basal three-quarters; apical limbus broad; veins not prominent.

Head, pronotum, ventral surfaces of thorax, abdomen, coriaceous areas and veins of tegmen, and legs yellowish brown, unmarked; second and third apical cells and posterior margins of second discoidal and fourth and fifth apicals dark brown, remaining cells pale yellowish hyaline; apical limbus unpigmented.

Male genitalia with aedeagus U-shaped; shaft directed vertically, very nearly as long as basal apodeme, as broad as apodeme in lateral aspect, apex turned slightly anteriorly; a transverse, subapical row of blunt spines on anterior surface, extending ventrally on lateral surfaces for two-thirds length of anterior surface; gonopore very large, subapical on posterior surface. Paramere with distal process slightly more than one-third total length, very much broader than basal process in lateral aspect; a few long spines on dorsal and posterior surfaces; basal process slender, tapering, apex acute.

This species is closely related to *minuta*, but is distinguished by the proportion of the tegmen covered by the pronotum, and by the structure of the aedeagus.

MATERIAL EXAMINED.

Holotype ♂, FRENCH GUIANA: Guyane (*Maroni*) (NCSU, Raleigh).

Paratype. FRENCH GUIANA: 1 ♂, data as holotype (BMNH).

Amastris brunneipennis Funkhouser

(Text-figs 44, 103, 181, 220, 275, 324)

Amastris brunneipennis Funkhouser, 1922 : 31. Holotype ♂, BRAZIL (USNM, Washington) [examined].

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.6 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.45 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.8 mm, length of pronotum 3.8 mm, maximum height of pronotum 1.0 mm, length of tegmen 3.3 mm.

Female unknown.

Head with vertex almost flat, densely and irregularly punctate; medial groove indistinct. Ocelli distinct, much closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for almost one-third its length beyond lower margins of vertex, basal margins obscure. Rostrum reaching beyond hind coxae.

Pronotum nearly four times as long as high; sides regularly rounded, without indentations; apex reaching to near tips of tegmina. Metopidium approximately twice as broad as high, smoothly rounded from base to junction with dorsum; median carina low near base, becoming more prominent towards junction with dorsum. Dorsum with maximum height at midlength; median carina low.

Tegmen with second discoidal cell very large, larger than each of first three apical cells, reaching

costal margin broadly between first and second apical cells; fourth apical cell very large and broad, equal in size to second discoidal; fifth apical relatively small, not entirely covered by side of pronotum; subcostal cell coriaceous and densely punctate over basal three-quarters; veins distinct.

Pronotum pale yellowish brown anteriorly, becoming greenish yellow posterior to humeral angles, unmarked; head slightly paler, yellowish; ocelli yellow, shining; eyes mottled grey and yellow; basal two-thirds of tegmen including coriaceous areas, and apical limbus, dark brown; remainder of tegmen and whole of wing clear hyaline; venter of thorax, coxae, and bases of femora dark brown; abdomen with lateral and dorsal surfaces yellow, venter dark brown; tibiae and tarsi pale yellowish brown.

Male genitalia with aedeagus U-shaped; shaft directed vertically, very nearly as long as basal apodeme; a transverse, subapical row of large spines across anterior surface, briefly extending ventrally on anterolateral surfaces; gonopore very large, subapical on posterior surface. Paramere simple; distal process nearly as long as basal process; numerous long spines on dorsal and lateral surfaces; basal process robust, truncate apically.

This small species is distinguished by its very low pronotum, heavily pigmented tegmina, and the structure of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Obidos, 10.ix.1919 (USNM, Washington).

This is the only specimen that has been available for examination. The species is recorded only from Brazil.

Amastris robusta sp. n.

(Text-figs 16, 79, 145, 226, 282, 337)

Both specimens with similar measurements.

Male: width of vertex excluding eyes 1.4 mm, width of vertex including eyes 2.3 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.6 mm, width of clypeus 0.6 mm, maximum width of pronotum 2.6 mm, length of pronotum 5.8 mm, maximum height of pronotum 2.1 mm, length of tegmen 4.8 mm.

Female unknown.

Head with vertex irregularly ridged and obscurely punctate; medial groove indistinct throughout its length. Ocelli large, prominent, equidistant from eyes as from each other, situated on centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal margins indistinct. Rostrum reaching hind coxae.

Pronotum with length approximately two and a quarter times maximum height, without lateral indentations; apex acute, reaching tips of tegmina. Metopidium with width two and a half times height, inclined anteriorly from base, then curving posteriorly to smooth junction with dorsum; median carina becoming gradually elevated towards junction with dorsum. Dorsum with maximum height at approximately one-fifth distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell smaller than each of first and second apical cells, larger than third apical cell, not reaching costal margin; fifth apical cell not entirely concealed by pronotum; subcostal cell weakly coriaceous and weakly and sparsely punctate over basal three-eighths; apical limbus broad; veins prominent.

Head, pronotum, abdomen, ventral surfaces of thorax, legs, coriaceous areas and veins of tegmen pale yellowish brown; head and pronotum with numerous small, irregularly scattered, bright yellow spots; median carina on dorsum irregularly edged with dark brown; cells of tegmen pale brownish hyaline, without darker markings; tarsal claws reddish brown.

Male genitalia with aedeagus U-shaped; shaft directed vertically, very robust, longer than basal apodeme, becoming gradually broader in lateral aspect from base to apex; a transverse, subapical row of very large, sharp, anteroventrally directed spines across anterior surface, continuing as a double row on anterolateral margins for slightly more than one-half length of anterior surface, becoming gradually smaller ventrally; gonopore very large, subapical on posterior surface. Paramere slender; distal process broadly recurved apically; numerous spines of various lengths on lateral, dorsal, and posterior surfaces, those on posterior surface sometimes very long; basal process slightly sinuate, almost parallel-sided, apex oblique, broadly rounded.

This species is distinguished by its large size, relatively low pronotum, and by the unique structure of the aedeagus.

MATERIAL EXAMINED.

Holotype ♂, COSTA RICA: Turrialba, 10.xi.1971 (*Becker*) (BMNH).

Paratype. COSTA RICA: 1 ♂, data as holotype (BMNH).

Amastris fonsecai sp. n.

(Text-figs 17, 76, 148, 227, 280, 330)

Male: width of vertex excluding eyes 1.2 mm, width of vertex including eyes 1.9 mm, length of vertex to base of clypeus 0.45 mm, length of clypeus 0.45 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.0 mm, length of pronotum 3.9 mm, maximum height of pronotum 1.2 mm, length of tegmen 3.5 mm. Female: slightly larger, similar in proportion; length of pronotum 4.1 mm, maximum height of pronotum 1.3 mm.

Head with vertex irregularly and indistinctly punctate, medial groove distinct basally, otherwise obsolete. Ocelli distinct, slightly closer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex; lateral margins distinct. Rostrum just passing hind coxae.

Pronotum with length three and three-quarters times maximum height; sides without indentations; apex acute, reaching tips of tegmina in male, somewhat shorter in female. Metopidium curving posteriorly from base to smooth junction with dorsum; median carina low. Dorsum with maximum height at one-third distance from humeral angles to apex; median carina prominent, not highly elevated.

Tegmen with second discoidal cell much larger than each of first three apical cells, reaching costal margin broadly between first and second apicals; fourth apical cell partially covered by pronotum in male, entirely exposed in female together with part of fifth apical; subcostal cell weakly coriaceous and sparsely punctate over basal nine-tenths; apical limbus narrow; veins distinct.

Head, pronotum, abdomen, and exposed part of anal area of tegmen pale yellowish brown, head and base of metopidium indistinctly mottled with darker brown; external margins of vertex very narrowly edged with black; ventral surfaces of thorax, hind femora, and basal part of subcostal cell dark brown; third apical cell, posterior angles of second and fourth apicals, adjacent veins and apical limbus brownish grey, remaining cells clear hyaline; other veins, posterior part of coriaceous area of subcostal cell, tibiae and tarsi pale yellowish brown.

Male genitalia with aedeagus U-shaped; shaft longer than basal apodeme, directed vertically; two transverse, subapical rows of large spines across anterior surface, extending ventrally as a single row of very large spines on lateral surfaces for distance equal to two-thirds length of anterior surface; gonopore small, subapical on posterior surface. Paramere with distal process slightly more than one-half total length, narrowly recurved apically; numerous small spines on lateral, dorsal, and posterior surfaces; basal process spatulate.

This species is distinguished by its very low pronotum and the arrangement of the very large spines on the shaft of the aedeagus.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Pedro Canario Es, Conceicao da Barra, x.1972 (*Alvarenga*) (BMNH).

Paratype. BRAZIL: 1 ♀, Corcovado, xi.1967 (*Alvarenga & Seabra*) (UP, Curitiba).

Amastris alapigmentata sp. n.

(Text-figs 39, 106, 198, 228, 283, 350)

Male: width of vertex excluding eyes 1.3 mm, width of vertex including eyes 2.0 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.6 mm, length of pronotum 5.3 mm, maximum height of pronotum 2.1 mm, length of tegmen 4.3 mm.

Female unknown.

Head with vertex densely and obscurely punctate; medial groove distinct throughout. Ocelli large, prominent, equidistant between eyes and each other, situated distinctly below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal and lateral margins distinct. Rostrum reaching just beyond mid coxae.

Pronotum with length two and a half times maximum height; sides without indentations; apex acute, reaching to near tips of tegmina. Metopidium wider than high, curving posteriorly from base to smooth junction with dorsum; median carina low basally, gradually becoming more elevated towards dorsum. Dorsum with maximum height one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell approximately equal in size to each of first three apical cells, not reaching costal margin; fifth apical cell concealed by pronotum; subcostal cell coriaceous and densely punctate over basal four-fifths; apical limbus narrow; veins distinct.

Head yellowish brown, slightly darker brown between ocelli, margins of vertex very narrowly edged with black; pronotum yellowish brown with an irregular darker brown band on each side of median carina; carina narrowly edged with black; abdomen and ventral surfaces of thorax dark brown, almost black; femora dark brown, tibiae and tarsi yellowish brown; tegmen with coriaceous area of subcostal cell concolorous basally with ventral surface of thorax, becoming paler posteriorly; veins brownish, except medial and its branches; exposed part of tegmen mainly deep brownish hyaline.

Male genitalia with aedeagus U-shaped; shaft directed vertically, slightly shorter than basal apodeme, approximately as broad as apodeme in lateral aspect; two subapical rows of twelve very large sharp spines on anterior surface; gonopore large, subapical on posterior surface. Paramere with distal process one-third total length; apex broadly recurved; numerous spines on lateral, dorsal and posterior surfaces; basal process almost parallel-sided, apex acute.

This species is distinguished by the pigmentation of the pronotum and the tegmen, and by the arrangement of spines on the aedeagus.

MATERIAL EXAMINED.

Holotype ♂, MEXICO: Cuernavaca, 5.viii.1938 (*Lipovsky*) (NCSU, Raleigh).

Amastris triviale sp. n.

(Text-figs 66, 72, 144, 230, 281, 332)

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.7 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.4 mm, width of clypeus 0.5 mm, maximum width of pronotum 1.9 mm, length of pronotum 3.7 mm, maximum height of pronotum 1.1 mm, length of tegmen 3.1 mm.

Female unknown.

Head with vertex finely and irregularly ridged and punctate; medial groove obsolete. Ocelli small, distinct, one and a half times as far from each other as from eyes, situated immediately below centro-ocular line. Frontoclypeus extending approximately one-quarter its length beyond lower margins of vertex, basal and lateral margins distinct. Rostrum reaching hind coxae.

Pronotum with length three and one-quarter times maximum height, without lateral indentations; apex acute, reaching to near tips of tegmina. Metopidium with width one and a half times height, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina prominent but not highly elevated.

Tegmen with second discoidal cell approximately equal in size to each of first three apical cells, not reaching costal margin; fifth apical cell almost entirely concealed by pronotum; subcostal cell coriaceous and punctate over basal four-fifths; apical limbus narrow; veins distinct.

Pronotum, ventral surfaces of thorax, abdomen, veins and coriaceous areas of tegmen brownish yellow, unmarked; head and supra-ocular callosities slightly darker, greyish brown; cells of tegmen clear hyaline, unmarked; legs concolorous with pronotum.

Male genitalia with aedeagus U-shaped; shaft directed vertically, slightly shorter than basal apodeme; subapical group of small, blunt spines on anterior surface; gonopore large, subapical on posterior surface. Paramere with distal process two-fifths total length; a few short spines on lateral surfaces; three much longer spines dorsally; basal process almost parallel-sided, apex acute, slightly upturned.

This is a small species, with the pronotum only slightly elevated, and with very simple male genitalia.

MATERIAL EXAMINED.

Holotype ♂, GUYANA: Upper Courantyne River, ix.1935 (*Hudson*) (BMNH).

Amastris punctata sp. n.

(Text-figs 37, 91, 164, 232, 284, 334)

Male: width of vertex excluding eyes 1.3 mm, width of vertex including eyes 1.9 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.6 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.2 mm, length of pronotum 4.6 mm, maximum height of pronotum 1.8 mm, length of tegmen 4.3 mm. Female: considerably larger than male but similar in proportion; length of pronotum 5.8 mm, maximum height of pronotum 2.5 mm.

Head more than twice as wide as long; vertex almost flat, irregularly and indistinctly punctate, medial groove distinct. Ocelli small, distinct, very slightly nearer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal and lateral margins distinct. Rostrum reaching to hind coxae.

Pronotum two and a half times as long as high, sides without indentations; apex very acute, slightly decurved, not reaching tips of tegmina. Metopidium somewhat broader than high,

inclined slightly anteriorly from base, meeting dorsum at almost 90° angle, anterior horn obsolete; median carina becoming highly elevated towards junction with dorsum. Dorsum with maximum height at one-third distance from metopidium to apex; median carina keel-like.

Tegmen with discoidal cells small; second not reaching costal margin, smaller than any of the apical cells; fifth apical cell not completely covered by pronotum; subcostal cell very weakly coriaceous and punctate over basal third; veins strong, prominent.

Head, pronotum, abdomen, ventral surfaces of thorax and legs, veins and coriaceous areas of tegmen dull, pale yellowish brown, head irregularly mottled with dark brown spots; ocelli shining, brownish; an irregular brown band running on each side of metopidium from below apex to base; a brown band extending from apex for approximately one-third distance to humeral angle; setose punctations of metopidium and sides of pronotum pigmented, appearing as numerous irregularly scattered, small brown spots; pronotum also with numerous indistinct whitish spots posteriorly; median carina narrowly and irregularly edged with dark brown; cells of tegmen and wing clear hyaline, unmarked; exposed part of apical limbus of tegmen weakly tinged brown; tarsal claws brown.

Male genitalia with aedeagus U-shaped; shaft robust, directed vertically, as long as basal apodeme; subapical group of approximately twelve large, slightly hooked spines on anterior surface; gonopore large. Paramere small; distal process two-fifths total length; numerous long spines on dorsal and lateral surfaces; basal process tapering, long, slender.

This is a medium sized species with the pronotum highly elevated and acutely angled anteriorly. It is distinguished from other species with similar pronotal pigmentation by the relatively small paramere, the basal process of which is not expanded apically.

MATERIAL EXAMINED.

Holotype ♂, COLOMBIA: Vaupes, River Vaupes, x.-xii. 1953 (*Taylor*) (BMNH).

Paratype. COLOMBIA: 1 ♀, data as holotype (BMNH).

Amastris froeschneri sp. n.

(Text-figs 22, 78, 163, 231, 285, 336)

Length of pronotum: male 3.2–3.6 mm, female 3.4–3.7 mm; maximum height of pronotum: male 0.9–1.0 mm, female 1.0–1.1 mm.

Male: width of vertex excluding eyes 0.9 mm, width of vertex including eyes 1.5 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.8 mm, length of pronotum 3.2 mm, maximum height of pronotum 0.9 mm, length of tegmen 3.0 mm. Female: equal in proportions to male.

Head with vertex finely and obscurely ridged and punctate; medial groove becoming obscure at level of ocelli. Ocelli small, distinct, twice as far from each other as from eyes, situated immediately above centro-ocular line. Frontoclypeus extending for one-quarter its length beyond lower margins of vertex, lateral margins distinct. Rostrum reaching hind coxae.

Pronotum with length nearly four times maximum height; without lateral indentations; apex acute, reaching to near tips of tegmina. Metopidium nearly twice as broad as high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina very low. Dorsum with maximum height at approximately one-third distance from humeral angles to apex; median carina prominent, not highly elevated.

Tegmen with second discoidal cell fractionally larger than each of first and second apical cells, distinctly larger than third apical, not reaching costal margin; fifth apical cell not completely covered by pronotum; subcostal cell coriaceous and densely punctate over basal four-fifths; apical limbus broad; veins distinct.

Head, pronotum, abdomen, and legs except femora brownish yellow, unmarked; ventral surfaces of thorax, femora, basal three-fifths of subcostal cell and adjacent part of basal cell, apical limbus, third apical cell and posterior halves of fourth and fifth apicals and adjacent veins usually dark brown, almost black in females, frequently paler in males where concolorous with pronotum or slightly darker; cells in centre of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft directed vertically, as long and as broad as basal apodeme in lateral aspect; two subapical rows of small, blunt spines on anterior surface, extending ventrally on anterolateral margins as single row for one-third of length of anterior surface; gonopore large, subapical on posterior surface. Paramere with distal process two-fifths total length; a few short spines on lateral and dorsal surfaces; basal process slightly sinuate, almost parallel-sided, apex acute.

This is a small species distinguished by the low, rounded pronotum, the distinctive dark pigmentation of the females, and the structure of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, PANAMA: Barro Colorado Island, Canal Zone, on *Desmopsis panamensis*, 19.iv.-3.v.1945 (*Zetek*) (USNM, Washington).

Paratypes. PANAMA: 1 ♂, 2 ♀, data as holotype (USNM); 1 ♂, 2 ♀, data as holotype (BMNH).

Amastris angulata sp. n.

(Text-figs 4, 75, 137, 233, 286, 339)

Male: width of vertex excluding eyes 1.4 mm, width of vertex including eyes 2.1 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.6 mm, width of clypeus 0.6 mm, maximum width of pronotum 2.3 mm, length of pronotum 4.8 mm, maximum height of pronotum 1.8 mm, length of tegmen 4.3 mm. Female: slightly larger than male, proportionately similar; length of pronotum 5.2 mm; maximum height of pronotum 2.2 mm.

Head with vertex finely, irregularly, and obscurely punctate; medial groove distinct basally, becoming obscure towards junction with clypeus. Ocelli very large, prominent, equidistant between eyes and each other, situated below centro-ocular line. Frontoclypeus extending for slightly more than one-quarter its length beyond lower margins of vertex, basal margins indistinct. Rostrum reaching just beyond mid coxae.

Pronotum with length two and a half times maximum height; sides without indentations; apex acute, reaching to near tips of tegmina. Metopidium slightly wider than high, inclined slightly anteriorly from base then slightly posteriorly to short, anterodorsally directed horn-like junction with dorsum; median carina low basally, gradually becoming elevated towards base of horn. Dorsum with maximum height, equal to that of horn, at one-fifth distance from humeral angles to apex; median carina highly elevated, keel-like.

Tegmen with second discoidal cell approximately equal in size to third apical cell, not reaching costal margin; first and second apicals much larger; fifth apical not entirely concealed by pronotum; subcostal cell weakly coriaceous and punctate over basal half; apical limbus broad; veins prominent.

Head, pronotum, abdomen, ventral surfaces of thorax, and coriaceous areas of tegmen pale yellowish brown; metopidium indistinctly and irregularly marked with pale brown from above eye, to midline at three-fifths of distance to junction with dorsum, paler centrally, irregularly mottled with brown and yellow; an irregular brown band on anterior horn extending ventrally for one-third distance to humeral angle; area between bands paler than remainder of pronotum; pronotum with a few small, widely and irregularly scattered dark brown spots laterally, each with short erect hair; a few very indistinct pale whitish spots posteriorly on pronotum; median

carina narrowly edged with black; cells of tegmen clear hyaline; apical limbus tinged with brown; veins pale, concolorous with pronotum, those on posterior margins of apical cells darker; legs concolorous with pronotum, tarsal claws darker, reddish brown.

Male genitalia with aedeagus U-shaped; shaft as long and as broad as basal apodeme in lateral aspect; two transverse, subapical rows of large spines across anterior surface, extending as single row for short distance on anterolateral margins; gonopore large, subapical on posterior surface. Paramere with distal process one-third total length; numerous long spines on lateral, dorsal, and posterior surfaces; basal process with apex expanded and obtusely rounded.

This species is distinguished by the degree of development of the anterior pronotal horn and the proportions of the male genitalia, in particular the paramere.

MATERIAL EXAMINED.

Holotype ♂, PERU: Huanuco, Huallaga Valley, tropical jungle, 23.ii.1954 (*Watkowski*) (NCSU, Raleigh).

Paratype. PERU: 1 ♀, data as holotype, 17.vi.1954 (BMNH).

Amastris vicina sp. n.

(Text-figs 14, 88, 151, 229, 287, 341)

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.8 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.6 mm, maximum width of pronotum 1.9 mm, length of pronotum 4.4 mm, maximum height of pronotum 1.6 mm, length of tegmen 3.6 mm.

Female unknown.

Head with vertex finely and irregularly ridged, obscurely punctate; medial groove becoming indistinct at level of ocelli. Ocelli large, prominent, slightly closer to the eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for slightly less than one-third its length beyond lower margins of vertex; lateral margins distinct. Rostrum reaching hind coxae.

Pronotum with length slightly greater than two and a half times maximum height, without lateral indentations; apex acute, reaching to near tips of tegmina. Metopidium nearly as high as wide, slightly inclined anteriorly from base, then curving posteriorly to smooth junction with dorsum; median carina becoming highly elevated towards dorsum. Dorsum with maximum height immediately posterior to humeral angles; median carina keel-like.

Tegmen with second discoidal cell approximately equal in size to each of first and second apical cells, very much larger than third apical, not reaching costal margin; fifth apical cell not completely covered by pronotum; subcostal cell weakly coriaceous and weakly, sparsely punctate over basal third; apical limbus very narrow; veins distinct.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, coriaceous areas and veins of tegmen pale brownish yellow, unmarked; cells and apical limbus of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft as long as basal apodeme, directed vertically; a dense group of large, sharp spines over apical two-fifths of anterior surface; gonopore subapical on posterior surface; apodeme expanded at midlength into large, anteriorly directed node. Paramere with distal process slightly greater than one-third total length; a few short spines on lateral and posterior surfaces; a few slightly longer spines on dorsal surface; basal process tapering slightly to acutely rounded apex.

This species is distinguished by the slight forward inclination of the metopidium, the degree of elevation and lack of dark pigmentation on the pronotum, and the arrangement and size of the spines on the shaft of the aedeagus.

MATERIAL EXAMINED.

Holotype ♂, GUYANA: Upper Courantyne River, ix.1935 (*Hudson*) (BMNH).

Amastris fnitima sp. n.

(Text-figs 10, 131, 150, 234, 288, 343)

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.6 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.8 mm, length of pronotum 4.2 mm, maximum height of pronotum 1.5 mm, length of tegmen 3.4 mm. Female: slightly larger than male, length of pronotum 4.5 mm, maximum height of pronotum 1.6 mm.

Head with vertex very weakly and obscurely ridged and punctate, medial groove obsolete. Ocelli large, prominent, slightly closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for one-quarter its length beyond lower margins of vertex, basal margins obscure. Rostrum reaching hind coxae.

Pronotum with length slightly less than three times maximum height, without lateral indentations; apex acute, not reaching tips of tegmina. Metopidium one and a half times as wide as high, slightly inclined anteriorly from base, then curving posteriorly to smooth junction with dorsum; median carina becoming elevated towards dorsum. Dorsum with maximum height at slightly less than one-fifth distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell approximately equal in size to first apical cell, slightly smaller than fourth apical, much larger than each of second and third apicals, not quite reaching costal margin; fifth apical cell not completely covered by pronotum; subcostal cell weakly coriaceous and punctate over basal quarter; apical limbus broad; veins distinct.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, veins and coriaceous areas of tegmen, pale yellowish brown, unmarked; cells of tegmen clear hyaline, unmarked; apical limbus and adjacent veins slightly fuscous; tarsal claws brown.

Male genitalia with aedeagus U-shaped; shaft directed vertically, very slightly shorter than and as broad as basal apodeme in lateral aspect; two transverse, subapical irregular rows of large spines on anterior surface, extending ventrally for two-fifths length of antero-lateral margins; gonopore large, subapical on posterior surface. Paramere with distal process slightly more than one-third total length; eleven spines of approximately uniform length on dorsal and posterior surfaces; basal process slightly sinuate, almost parallel-sided, apex rounded.

This species is distinguished by the arrangement of spines on the aedeagus.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Linhares, ix.1972 (*Alvarenga*) (BMNH).

Paratype. BRAZIL: 1 ♀, data as holotype (BMNH).

Amastris pseudoelevata sp. n.

(Text-figs 54, 109, 191, 235, 289, 345)

Male: width of vertex excluding eyes 1.5 mm, width of vertex including eyes 2.3 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.9 mm, length of pronotum 5.7 mm, maximum height of pronotum 2.4 mm, length of tegmen 4.6 mm.

Female unknown.

Head with vertex almost flat, obscurely punctate; medial groove indistinct. Ocelli large,

prominent, equidistant between each other and eyes, situated on centro-ocular line. Frontoclypeus extending for less than a quarter its length beyond lower margins of vertex; lateral and basal margins obscure. Rostrum reaching mid coxae.

Pronotum approximately two and a third times as long as high, sides without indentations; apex acute, reaching tips of tegmina. Metopidium slightly wider than high, rising vertically from base, then curving posteriorly to smooth junction with dorsum; median carina low basally, becoming highly elevated towards junction with dorsum. Dorsum highest immediately posterior to humeral angles; median carina very prominent, keel-like.

Tegmen with second discoidal cell much smaller than each of first three apical cells, not reaching costal margin; subcostal cell weakly coriaceous and shallowly punctate over basal half; veins distinct.

Head, sides of pronotum posterior to humeral angles, ventral surfaces of thorax, legs, abdomen, coriaceous areas and veins of tegmen yellowish brown; eyes and ocelli very distinctly dark brown; metopidium with a dark brown band on each side from base above eye to midline somewhat below junction with dorsum, becoming paler towards midline; dorsal keel of pronotum bright reddish brown throughout length except a small area at junction with metopidium colorous with rest of pronotum; tegmina pale brownish hyaline.

Male genitalia with aedeagus robust, U-shaped; shaft directed vertically, slightly longer than basal apodeme; three subapical horizontal rows of spines on anterior surface; gonopore subapical on posterior surface. Paramere with distal process approximately one-third total length; a small subapical flap-like membrane on dorsal surface; approximately fourteen erect spines of varying length on dorsal, lateral, and posterior surfaces. Basal process narrow, almost parallel-sided.

This species is based on a single specimen which was previously designated as the allotype of *Amastris elevata* Funkhouser. Examination of this specimen and the holotype of *A. elevata* has proved them to be distinct species.

MATERIAL EXAMINED.

Holotype ♂, PERU: Napo River, vi.1920 (USNM, Washington).

Amastris inconspicua sp. n.

(Text-figs 67, 70, 149, 236, 290, 347)

Male: width of vertex excluding eyes 1.3 mm, width of vertex including eyes 2.1 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.6 mm, maximum width of pronotum 2.4 mm, length of pronotum 5.2 mm, maximum height of pronotum 1.7 mm, length of tegmen 4.4 mm.

Female unknown.

Head with vertex very finely and obscurely ridged and punctate; medial groove obsolete. Ocelli large, prominent, very slightly closer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal margin indistinct. Rostrum reaching middle coxae.

Pronotum with length three times maximum height; sides with shallow and obscure indentations at midlength; apex acute, reaching tips of tegmina. Metopidium one and a half times as wide as high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina becoming elevated towards dorsum. Dorsum with maximum height at one-fifth distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell larger than first apical cell, much larger than each of second and third apicals, just reaching costal margin between first and second apicals; fourth apical cell partially covered by pronotum; fifth entirely concealed; subcostal cell weakly coriaceous and punctate over basal three-quarters; apical limbus broad; veins distinct.

Head, pronotum, abdomen, ventral surfaces of thorax, legs, coriaceous areas and veins of tegmen pale yellow, without markings; cells and limbus of tegmen clear hyaline, unmarked; tarsal claws pale brown.

Male genitalia with aedeagus U-shaped; shaft slightly shorter than and nearly as broad as basal apodeme in lateral aspect, directed vertically; three transverse, subapical, rows of spines on anterior surface, extending slightly onto antero-lateral surfaces; gonopore subapical on posterior surface. Paramere with distal process slightly more than half total length; approximately eleven long spines on posterior, lateral, and dorsal surfaces; basal process almost parallel-sided, apex truncate.

This medium sized species, devoid of dark pigmentation, is distinguished by the structure of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Santa Catharina, Hansa Humboldt, W 50, S 26, 1930 (*Maller*) (BMNH).

Amastris obscura sp. n.

(Text-figs 58, 121, 184, 237, 291, 349)

Male: width of vertex excluding eyes 1.2 mm, width of vertex including eyes 1.8 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.0 mm, length of pronotum 4.6 mm, maximum height of pronotum 1.4 mm, length of tegmen 4.1 mm. Female: length of pronotum 4.2–4.5 mm, maximum height of pronotum 1.6–1.7 mm.

Head with vertex finely ridged and obscurely punctate; medial groove distinct from base to level of ocelli. Ocelli small, distinct, equidistant between each other and eyes, situated immediately below centro-ocular line. Frontoclypeus extending for approximately one-quarter its length beyond lower margins of vertex, lateral and basal margins distinct. Rostrum reaching hind coxae.

Pronotum with length slightly more than three times maximum height, with very shallow and obscure lateral indentations at midlength; apex acute, reaching to near tips of tegmen. Metopidium almost one and a half times as wide as high, almost vertical from base, then curving posteriorly to smooth junction with dorsum; median carina becoming gradually elevated towards dorsum. Dorsum with maximum height immediately posterior to humeral angles; median carina keel-like.

Tegmen with second discoidal cell larger than fourth apical, very much larger than each of first three apical cells, reaching costal margin broadly between first and second apicals; fifth apical not completely covered by pronotum; subcostal cell coriaceous and densely punctate over basal nine-tenths; apical limbus relatively narrow; veins distinct.

Head, pronotum, abdomen, coriaceous areas and veins of tegmen, deep yellow, unmarked; ventral surfaces of thorax, legs, and basal third of subcostal cell, brownish; cells and limbus of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft slightly longer than basal apodeme, directed vertically, apex inclined slightly towards apodeme; a dense group of small, blunt spines over apical two-thirds of anterior surface; gonopore subapical on posterior surface; apodeme massive, almost six times as broad as shaft in lateral aspect. Paramere with distal process slightly less than one-half total length; numerous small spines of uniform length on dorsal and lateral surfaces; basal process gradually tapering to slightly upturned, acutely rounded apex.

This species is distinguished primarily by the massive basal apodeme of the aedeagus.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Rio Brilhante, 25.x.1970 (*Becker*) (UP, Curitiba).

Paratype. GUYANA: 1 ♀, Money Jump, Essequibo River, 9.x.1929 (*Oxford University Expedition*) (BMNH); 1 ♀, New River, viii.1934 (*Hudson*) (BMNH).

Amastris singularis sp. n.

(Text-figs 65, 69, 147, 238, 292, 352)

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.6 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.4 mm, width of clypeus 0.5 mm, maximum width of pronotum 1.8 mm, length of pronotum 3.8 mm, maximum height of pronotum 1.2 mm, length of tegmen 3.4 mm. Female: slightly larger than male, length of pronotum 4.2–4.5 mm, maximum height of pronotum 1.3–1.5 mm.

Head with vertex irregularly ridged and punctate; medial groove becoming obscure at level of ocelli. Ocelli large, distinct, slightly closer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal margins indistinct. Rostrum reaching hind coxae.

Pronotum three times as long as high, without lateral indentations; apex acute, reaching to near tips of tegmina. Metopidium more than one and a half times as wide as high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina low, distinct. Dorsum with maximum height immediately posterior to humeral angles; median carina elevated, keel-like.

Tegmen with second discoidal cell as large as fourth apical cell, reaching costal margin broadly between first and second apical cells; first and third apical cells smaller, second very small; fifth apical cell completely covered by pronotum; subcostal cell heavily coriaceous and densely punctate over basal third, mid third of cell less coriaceous with punctuation more scattered; apical limbus broad; veins distinct.

Head, metopidium, and ventral surfaces of thorax reddish brown; pronotum, abdomen, coriaceous areas and veins of tegmen, and legs dull, yellowish brown, unmarked except basal third of subcostal cell which is concolorous with ventral surface of thorax; cells and apical limbus of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft distinctly longer than, and less than one half width of basal apodeme in lateral aspect, directed vertically; a dense group of small, blunt spines over apical two-thirds of anterior surface; gonopore subapical on posterior surface. Paramere with distal process slightly more than one-third total length; a few spines on dorsal surface; very few small spines on lateral surface; basal process becoming gradually expanded from base to spatulate, obtusely rounded apex.

This species is distinguished by the proportions of the head and pronotum, the lack of dark pigmentation on the pronotum, and the structure of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Foz do Iguarcu, mercury vapour trap, 7.xii.1966 (UP, Curitiba).

Paratypes. BRAZIL: 1 ♀, data as holotype (UP); 1 ♀, data as holotype (BMNH).

Amastris undulata sp. n.

(Text-figs 25, 90, 152, 239, 293, 354)

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.6 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.9 mm, length of pronotum 3.7 mm, maximum height of pronotum 1.0 mm, length of tegmen 3.4 mm.

Female unknown.

Head with vertex irregularly and obscurely punctate, medial groove indistinct throughout its length. Ocelli very large, prominent, slightly closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for slightly more than one-third its length beyond lower margins of vertex, basal margins indistinct. Rostrum reaching hind coxae.

Pronotum with length three and a half times maximum height, shallowly and indistinctly indented immediately posterior to humeral angles, at mid-length and in posterior third; apex acute, not reaching tips of tegmina. Metopidium with breadth slightly more than twice height, inclined slightly anteriorly from base, then curving dorsally and posteriorly, levelling off slightly above humerals, then rising slightly again to smooth junction with dorsum; median carina low, gradually elevated near junction with dorsum. Dorsum with maximum height at approximately one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell slightly larger than each of first three apical cells, just reaching costal margin between first and second apical cells; fifth apical not completely covered by pronotum; subcostal cell weakly coriaceous and finely and sparsely punctate over basal fourths; apical limbus relatively narrow; veins slender, distinct.

Head reddish brown, unmarked; pronotum pale yellowish laterally, irregularly and indistinctly mottled with pale brown; junction of metopidium and dorsum and areas between lateral indentations in posterior third with darker brown markings; median carina at these points irregularly edged with dark brown; metopidium with irregular dark brown band on each side from internal angle of eye to midline at level of humeral angles, the area between these bands irregularly mottled with light and dark brown and pale yellow; ventral surfaces of thorax, legs, abdomen, pale reddish brown, concolorous with head; tarsal claws darker brown; veins and coriaceous areas of tegmen pale brownish yellow; cells and apical limbus clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft directed vertically, as long as and two-fifths as broad as basal apodeme, in lateral apert; a dense group of small, blunt spines over apical quarter of anterior surface; gonopore small, subapical on posterior surface. Paramere large, twice length of shaft; distal process approximately one-half total length; apex narrow; numerous small spines on lateral surfaces; an approximately equal number of longer spines on dorsal surface; basal process increasing in width towards apex.

This species is distinguished by the very low pronotum which is distinctly stepped in lateral profile above the humeral angles. It is closely related to *specialis* but differs in the extent to which the tegmina are covered by the pronotum, and in the structure of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Encruzilhada, xi.1972 (*Seabra & Alvarenga*) (BMNH).

Amastris viridisparis sp. n.

(Text-figs 31, 99, 179, 240, 294, 338)

Male: width of vertex excluding eyes 0.8 mm, width of vertex including eyes 1.3 mm, length of vertex to base of clypeus 0.3 mm, length of clypeus 0.3 mm, width of clypeus 0.4 mm, maxi-

mm width of pronotum 1.5 mm, length of pronotum 2.8 mm, maximum height of pronotum 0.8 mm, length of tegmen 2.5 mm.

Female unknown.

Head with vertex irregularly and indistinctly ridged and punctate; medial groove basally distinct, becoming obsolete near junction with clypeus. Ocelli large, prominent, slightly closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, lateral margins distinct.

Pronotum with length three and a half times maximum height; sides with very shallow and indistinct indentations at midlength; apex acute, terminating some distance before tips of tegmina. Metopidium more than one and a half times as wide as high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina arising near base, low, becoming only slightly elevated before junction with dorsum. Dorsum with maximum height at approximately one-third distance from humeral angle to apex; median carina prominent, not highly elevated.

Tegmen with second discoidal cell slightly larger than each of first and second apical cells, smaller than third and fourth apicals, not reaching costal margin; fifth apical cell not entirely concealed by pronotum; subcostal cell coriaceous and punctate over basal three-quarters; apical limbus broad; veins distinct.

Head and pronotum pale reddish brown, pronotum with irregular greenish spots; ventral surface of thorax, abdomen, legs, veins and coriaceous areas of tegmen slightly paler, brownish yellow; cells of tegmen clear hyaline, unmarked; apical limbus unmarked.

Male genitalia with aedeagus U-shaped; shaft directed vertically, longer than basal apodeme; a group of small, blunt spines over apical fifth of anterior surface; gonopore relatively small, subapical on posterior surface. Paramere with distal process two-fifths total length; approximately twelve small spines on dorsal and lateral surfaces; basal process almost parallel-sided, apex acute.

This is the smallest species yet known, and is distinguished by the very large third apical cell of the tegmen and by the pigmentation of the pronotum which resembles that of *guttata*.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Pará, Jacareacanga, xii.1969 (*Barbosa*) (UP, Curitiba).

Amastris flava sp. n.

(Text-figs 41, 107, 187, 242, 295, 340)

Length of pronotum: male 4.1–4.2 mm, female 4.2–4.6 mm; maximum height of pronotum: male 1.3–1.4 mm, female 1.4–1.5 mm.

Male: width of vertex excluding eyes 1.2 mm, width of vertex including eyes 1.7 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 1.9 mm, length of pronotum 4.2 mm, maximum height of pronotum 1.4 mm, length of tegmen 3.8 mm. Female: similar in proportions.

Head with vertex finely, irregularly and indistinctly punctate; medial groove distinct throughout. Ocelli small, distinct, very slightly closer to eyes than to each other, situated some distance below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex; lateral and basal margins distinct. Rostrum reaching posterior coxae.

Pronotum with length slightly less than three times height; sides without indentations; apex acute, not reaching tips of tegmina. Metopidium one and a half times as wide as high, curving regularly from base to smooth junction with dorsum; median carina low basally,

becoming gradually more elevated towards dorsum. Dorsum with maximum height at one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell approximately equal in size to fourth apical cell, very much larger than each of first three apicals, reaching costal margin narrowly between first and second apical cells; fifth apical not entirely concealed by pronotum; subcostal cell weakly coriaceous and sparsely punctate over basal three-quarters; apical limbus broad; veins indistinct.

Head, pronotum, apices of femora, bases of fore and middle tibiae, and entire hind tibia bright yellow; median carina narrowly edged with black; ventral surfaces of thorax, bases of femora, apices of fore and middle tibiae, and basal third of coriaceous area of subcostal cell of tegmen dark brown, almost black; tegmen with veins very pale yellow, often unpigmented; apical limbus and adjacent veins on posterior margins of apical cells brown; all cells unpigmented hyaline.

Male genitalia with aedeagus U-shaped; shaft very slender, approximately one-quarter as broad as, and distinctly longer than, basal apodeme in lateral aspect, directed vertically; apex inclined slightly anteriorly; a dense group of small blunt spines over apical third of anterior surface. Paramere with distal process approximately half total length, very broad basally in lateral aspect; twelve to fourteen erect spines subapically on dorsal and lateral surfaces; basal process short, sinuate, apically acute.

This species is distinguished by the pigmentation and by the structure of the aedeagus. The pigmentation of the females is often weaker than that of the males, with the ventral surface of the thorax pale brown, though usually still distinctly darker than the pronotum.

MATERIAL EXAMINED.

Holotype ♂, PERU: Santa Isabel, Cusco, 1-3.i.1952 (*Waytkowski*) (NCSU, Raleigh).

Paratypes. PERU: 2 ♂, 5 ♀, data as holotype (NCSU); 2 ♂, 4 ♀, data as holotype (BMNH); 2 ♀ Iquitos, 5.viii.1960 (NCSU).

Amastris reclusa sp. n.

(Text-figs 28, 115, 171, 241, 296, 342)

Male: width of vertex excluding eyes 0.8 mm, width of vertex including eyes 1.4 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.5 mm, length of pronotum 3.1 mm, maximum height of pronotum 1.0 mm, length of tegmen 2.7 mm. Female: a little larger than male, pronotum slightly more elevated; pronotal length 3.5 mm, maximum height of pronotum 1.2 mm.

Head with vertex very finely and obscurely ridged and punctate; medial groove distinct basally, becoming obscure below level of ocelli. Ocelli distinct, slightly nearer to eyes than to each other; situated on centro-ocular line. Frontoclypeus extending for little more than one-quarter its length beyond lower margins of vertex; lateral and basal margins distinct. Rostrum reaching just beyond hind coxae.

Pronotum with length more than three times maximum height; sides shallowly and indistinctly indented immediately posterior to humeral angles and again at midlength; apex acute, terminating before tips of tegmina. Metopidium nearly twice as wide as high, curving posteriorly from base to make an almost smooth junction with dorsum; median carina arising immediately above base, distinct, becoming elevated towards junction with dorsum. Dorsum with maximum height at one-third distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell as large as fourth apical, distinctly larger than each of first three apical cells, not reaching, costal margin; fifth apical cell not completely concealed

by pronotum; subcostal cell coriaceous over basal quarter, finely punctate over basal three-quarters of cell; apical limbus broad; veins narrow, not prominent.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, coriaceous areas and veins of tegmen, pale yellowish brown, unmarked; cells and limbus of tegmen unpigmented.

Male genitalia with aedeagus U-shaped; shaft directed vertically, longer than and almost as broad as basal apodeme in lateral aspect; a dense group of small blunt spines over apical third of anterior surface; gonopore large, subapical on posterior surface. Paramere with distal process less than half total length, little broader than basal process in lateral aspect; approximately fourteen small spines over dorsal and lateral surfaces; basal process approximately parallel-sided, apex rounded.

Although this is not a very distinctive species, it is nevertheless distinguishable by a total lack of dark pigmentation, its small size and low pronotum, and the structure of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Mato Grosso, 12°49' S 51°45' W, gallery forest, 25.xi.1968 (Knight) (BMNH).

Paratype. BRAZIL: 1 ♀, data as holotype (BMNH).

Specimens collected on Royal Society / Royal Geographical Society Xavantina / Cachimbo Expedition 1967-69.

Amastris guttata Fonseca

(Text-figs 27, 100, 195, 245, 297, 346)

Amastris guttata Fonseca, 1941 : 139. Holotype ♀, BRAZIL (MZUSP, São Paulo) [examined].

Length of pronotum: male 3.0-3.1 mm, female 3.6-4.2 mm; maximum height of pronotum: male 0.9 mm, female 1.3-1.4 mm.

Male: width of vertex excluding eyes 0.9 mm, width of vertex including eyes 1.4 mm, length of vertex to base of clypeus 0.4 mm, width of clypeus 0.4 mm, length of clypeus 0.4 mm, maximum width of pronotum 1.5 mm, length of pronotum 3.1 mm, maximum height of pronotum 0.9 mm, length of tegmen 2.6 mm. Female: considerably larger than male but proportionately similar; pronotal length 4.0 mm, maximum height of pronotum 1.4 mm.

Head with vertex obscurely ridged and punctate; medial groove distinct basally, becoming obsolete near base of clypeus. Ocelli prominent, closer to the eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal margins obscure. Rostrum reaching hind coxae.

Pronotum three times as long as high, sides without indentations, apex acute, terminating immediately before tips of tegmina. Metopidium nearly twice as wide as high, curving posteriorly from base to smooth junction with dorsum; median carina arising near base, prominent but not highly elevated. Dorsum with maximum height at one-quarter distance from humeral angle to apex; median carina low, not keel-like.

Tegmen with second discoidal cell approximately equal in size to each of first three apical cells, nearly reaching costal margin; fifth apical cell completely covered by pronotum; subcostal cell weakly coriaceous and punctate over basal four-fifths; veins distinct.

Head, abdomen, ventral surfaces of thorax, legs, and veins and coriaceous areas of tegmen pale brown, head sometimes darker in males and occasionally mottled with dark brown or black; pronotum red with irregular pale green patches giving reticulate appearance; cells of tegmen unpigmented; apices of tibiae and tarsi dark brown.

Male genitalia with aedeagus robust, U-shaped; shaft longer than, and as broad as, basal apodeme in lateral aspect; a dense group of small spines over apical two-fifths of anterior

surface; gonopore large, situated subapically on posterior surface. Paramere simple; distal process almost one-half total length; a few erect spines on dorsal and lateral surfaces; basal process almost parallel-sided, apex blunt.

This species may be immediately distinguished by the very distinctive pronotal pigmentation and the very robust shaft of the aedeagus.

MATERIAL EXAMINED.

Holotype ♀, BRAZIL: Belem, Para, 10.x.1938 (*Sauer*) (MZUSP, São Paulo). GUY-ANA: 2 ♂, 3 ♀, New River, 26.ii.1938 (*Hudson*) (BMNH).

Amastris evexa sp. n.

(Text-figs 57, 123, 175, 243, 298, 356)

Length of pronotum: male 3.4–3.6 mm, female 3.9–4.2 mm; maximum height of pronotum: male 1.3 mm, female 1.6–1.8 mm.

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.6 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.8 mm, length of pronotum 3.6 mm, maximum height of pronotum 1.3 mm, length of tegmen 3.2 mm.

Female: slightly larger than male, pronotum more elevated, length of pronotum 4.2 mm, maximum height of pronotum 1.7 mm.

Head with vertex obscurely ridged and punctate; medial groove becoming indistinct towards junction with clypeus. Ocelli large, not prominent, closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex; lateral and basal margins obscure. Rostrum reaching to hind coxae.

Pronotum with length slightly less than three times maximum height; sides with a shallow indentation immediately posterior to humeral angle, another at midlength, and a third in posterior third; apex acute, terminating well before tips of tegmina. Metopidium slightly less than one and a half times as wide as high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina low basally, gradually becoming more elevated towards dorsum. Dorsum with maximum height slightly less than one-quarter distance from humeral angles to apex; median carina prominent, elevated.

Tegmen with second discoidal cell approximately equal in size to each of first and third apical cells, larger than second apical, slightly smaller than fourth apical, not reaching costal margin; fifth apical cell relatively well exposed; subcostal cell very weakly and indistinctly coriaceous and punctate over basal three-quarters; apical limbus broad; veins distinct.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, and veins and coriaceous areas of tegmen yellowish brown, without markings; cells of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft not as long as basal apodeme, directed vertically, apex converging slightly with apodeme; a dense group of small blunt spines over apical quarter of anterior surface; gonopore small, situated subapically on posterior surface. Paramere very large relative to size of aedeagus; distal process slightly less than one-half total length, obtusely recurved apically; approximately ten large spines on dorsal surface and a few smaller spines subapically on lateral surface; basal process long and slender, almost parallel-sided, apex acutely truncate.

This species lacks dark pigmentation and is distinguished by the structure of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Pará, Belem, iv.1954 (*Fonseca*) (MZUSP, São Paulo).

Paratypes. BRAZIL: 3 ♀, data as holotype (MZUSP); 1 ♂, 2 ♀, data as holotype (BMNH).

Amastris affinis sp. n.

(Text-figs 15, 81, 160, 244, 299, 358)

Male: width of vertex excluding eyes 1.3 mm, width of vertex including eyes 2.1 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.4 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.4 mm, length of pronotum 4.8 mm, maximum height of pronotum 1.3 mm, length of tegmen 4.2 mm.

Female unknown.

Head with vertex very distinctly and boldly punctate; medial groove distinct. Ocelli large, prominent, equidistant between eyes and each other, situated slightly below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal and lateral margins distinct. Rostrum reaching hind coxae.

Pronotum with length three and three-quarters times maximum height, without lateral indentations; apex acute, almost reaching tips of tegmina. Metopidium with width almost twice height, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina low, becoming elevated at junction with dorsum. Dorsum with maximum height at slightly less than one-third distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell slightly larger than each of first three apical cells, reaching costal margin; fourth apical cell large; fifth entirely concealed by pronotum; subcostal cell weakly coriaceous over basal third, finely punctate over basal four-fifths; apical limbus narrow; veins distinct.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, coriaceous areas and veins of tegmen pale yellowish brown, unmarked; ocelli narrowly edged with scarlet; tarsal claws brown; cells and limbus of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft directed vertically, shorter than and almost as broad as basal apodeme in lateral aspect; a dense group of small blunt spines over apical three-eighths of anterior surface; gonopore subapical on posterior surface. Paramere very large; distal process massive, almost half total length, apex slender; numerous slightly curved spines on lateral and posterior surfaces, a few very long spines on dorsal surface; basal process slender, less than one-third width of distal process in lateral aspect, slightly expanded apically.

This species is similar to *fallax*, but differs in the much heavier punctation on the head, the more prominent ocelli, and slight but distinct differences in the proportions of the head. It is distinguished from all other species by the structure of the male genitalia, particularly the paramere.

MATERIAL EXAMINED.

Holotype ♂, PANAMA: Canal Zone, Mojinga Swamp, 20.xi.1951 (*Blanton*) (USNM, Washington).

Amastris conspicua sp. n.

(Text-figs 7, 133, 157, 246, 300, 344)

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.6 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 1.8 mm, length of pronotum 4.0 mm, maximum height of pronotum 1.1 mm, length of tegmen 3.7 mm.

Female unknown.

Head with vertex very weakly and obscurely ridged and punctate, medial groove distinct basally. Ocelli large, prominent, twice as far from each other as from eyes, situated on centro-ocular line. Frontoclypeus extending for approximately one-third its length beyond lower margins of vertex, basal margins obscure. Rostrum reaching posterior coxae.

Pronotum with length three and a half times maximum height, without lateral indentations; apex acute, terminating well before tips of tegmina. Metopidium with width nearly twice height, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina arising abruptly some distance above base, highly elevated. Dorsum with maximum height at one-eighth distance from humeral angles to apex; median carina slightly less elevated than on metopidium, keel-like.

Tegmen relatively little covered by pronotum; second discoidal cell as large as each of first and second apical cells, slightly smaller than third apical cell, not reaching costal margin; fifth apical cell not completely concealed by pronotum, relatively small; subcostal cell coriaceous and punctate over basal third; apical limbus broad; veins very prominent.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, coriaceous areas and veins of tegmen pale brown, mottled with darker brown; metopidium with irregular ridges and median carina dark brown; head with a dark brown stripe on each side of medial groove against inner margin of ocellus extending from base to lateral lobe of frontoclypeus; tarsal claws black; tegmen with cells clear hyaline, apical limbus pale brownish.

Male genitalia with aedeagus U-shaped; shaft directed vertically, shorter than and almost as broad as basal apodeme in lateral aspect; a dense group of spines over apical third of anterior surface; gonopore very large, subapical on posterior surface. Paramere with distal process approximately one-third total length; numerous spines on dorsal and posterior surfaces; basal process very robust, greatly expanded apically, spatulate.

This species is distinguished by the relatively large area of exposed tegmen, the size of the apical cells, the unique form of the median carina on the metopidium, and the pattern of pigmentation on the head.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Encruzilhada, xi.1972 (*Alvarenga/Seabra*) (BMNH).

Amastris notata sp. n.

(Text-figs 33, 101, 197, 248, 301, 353)

Male: width of vertex excluding eyes 0.1 mm, width of vertex including eyes 1.5 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.7 mm, length of pronotum 3.3 mm, maximum height of pronotum 1.0 mm, length of tegmen 3.2 mm. Female: similar in proportions to male; length of pronotum 3.0–3.2 mm; maximum height of pronotum 0.8–1.0 mm.

Head with vertex roughly, irregularly and distinctly ridged and punctate; medial groove distinct throughout. Ocelli large, prominent, somewhat closer to the eyes than to each other,

situated on centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, lateral and basal margins distinct. Rostrum reaching hind coxae.

Pronotum with length one and a third times maximum height; sides with a distinct shallow indentation immediately posterior to humeral angles, another at midlength, and a third in posterior third; apex acute, not reaching tips of tegmina. Metopidium more than twice as wide as high, curving dorsally and posteriorly from base, levelling out slightly above humeral angles, then rising again to junction with dorsum; median carina arising near base, low, distinct. Dorsum with maximum height at one-quarter distance from humeral angles to apex.

Tegmen with second discoidal cell very slightly larger than each of first three apical cells, reaching costal margin; fifth apical cell almost entirely concealed by pronotum; subcostal cell weakly coriaceous and punctate over basal three-fifths; apical limbus broad; veins prominent.

Pigmentation variable; pronotum dull, pale brownish, an irregular dark brown vertical band laterally from medial carina posterior to central indentation to one-third distance from lower margin; metopidium and pronotum anterior to highest point mottled with dark brown, an irregular dark brown band in dark forms on each side of metopidium from base to midline at junction with dorsum; only supra-ocular callosities darkly pigmented in pale forms; head mottled with dark brown; ocelli pale brown, narrowly edged with crimson; ventral surfaces of thorax and adjacent coriaceous areas of tegmen dark brown; abdomen yellowish brown; legs with femora dark brown, tibiae and tarsi paler, concolorous with sides of pronotum; veins of tegmen very pale yellowish brown, only slightly pigmented; cells and apical limbus clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft robust, directed vertically, very slightly shorter than and more than half as broad as basal apodeme in lateral aspect; a dense group of short, blunt spines over apical third of anterior surface; gonopore large, situated on posterior surface. Paramere with distal process approximately one-third of total length, with approximately eight short spines on lateral surfaces; fewer longer spines on dorsal surface; basal process almost parallel-sided, apex acute.

This species is closely related to *sakakibarai* but differs in the pronotal pigmentation and the structure of the male genitalia. It differs from *maculata* and *undulata* in the proportions of the basal apodeme of the aedeagus, the arrangement of spines on the paramere, and the tegminal and pronotal pigmentation.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Parà, Belém, 1945 (*Fonseca*) (MZUSP, São Paulo).

Paratypes. BRAZIL: 1 ♀, São Paulo, Aimores (*Fonseca*) (MZUSP); 1 ♀, São Paulo, Aimores (*Fonseca*) (BMNH).

Amastris pseudomaculata sp. n.

(Text-figs 19, 130, 143, 247, 302, 355)

Length of pronotum 3.3–3.5 mm; maximum height of pronotum 0.9–1.1 mm.

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.6 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.4 mm, width of clypeus 0.3 mm, maximum width of pronotum 1.7 mm, length of pronotum 3.3 mm, maximum height of pronotum 1.1 mm, length of tegmen 3.0 mm.

Female unknown.

Head with vertex very irregularly ridged and punctate; medial groove becoming obscure at level of ocelli. Ocelli large, prominent, slightly nearer to eyes than to each other, situated

on centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal and lateral margins distinct. Rostrum reaching hind coxae.

Pronotum with length three times maximum height, with a weak and indistinct lateral indentation immediately posterior to humeral angle, another at midlength, and a third in posterior third; apex acute, not reaching tips of tegmina. Metopidium with breadth slightly less than twice height, curving dorsally and posteriorly from base, levelling off slightly before smooth junction with dorsum, median carina becoming elevated near junction with dorsum. Dorsum with maximum height at one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell approximately equal in size to each of first three apical cells, not reaching costal margin; fifth apical cell not completely covered by pronotum; subcostal cell coriaceous over basal two-fifths, finely punctate over basal four-fifths; apical limbus broad; veins distinct.

Pronotum, except for central area of metopidium, ventral surfaces of thorax, abdomen, veins and coriaceous areas of tegmen, and legs, pale yellowish brown; metopidium mottled with dark brown; basal two-fifths of subcostal cell sometimes dark brown; head brown; cells of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft as long as and approximately half as broad as basal apodeme in lateral aspect, directed vertically; a dense group of very small blunt spines over apical third of anterior surface; gonopore subapical on posterior surface. Paramere with distal process approximately half total length; numerous small spines on lateral surfaces; longer spines on dorsal surface; basal process slender, becoming gradually expanded towards apex, spatulate.

This species is distinguished from *maculata* by the more rounded metopidium and the structure of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, PANAMA: Rio Las Lajas, nr Coronado Beach, 17.x.1952 (*Blanton*) (USNM, Washington).

Paratypes. PANAMA: 1 ♂, Mojinga Swamp, Canal Zone, 19.xi.1951 (*Blanton*) (USNM); 1 ♂, data as above except 27.xi.1951 (BMNH).

Amastris specialis sp. n.

(Text-figs 23, 87, 161, 250, 303, 361)

Male: width of vertex excluding eyes 1.3 mm, width of vertex including eyes 2.1 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.3 mm, length of pronotum 4.5 mm, maximum height of pronotum 1.2 mm, length of tegmen 3.9 mm. Female: pronotum rather more elevated, length 4.5 mm, maximum height 1.4 mm.

Head with vertex very irregularly and indistinctly punctate; medial groove obsolete. Ocelli very prominent, slightly closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for approximately one-third its length beyond lower margins of vertex, basal margins indistinct. Rostrum just reaching to hind coxae.

Pronotum with length three and three-quarters maximum height; a shallow and indistinct indentation laterally immediately posterior to humeral angles, another at midlength, and a third in posterior third; apex acute, almost reaching tips of tegmina. Metopidium slightly more than twice as wide as maximum height, curving dorsally and posteriorly from base, levelling off slightly above humeral angles, then rising again at junction with dorsum; median

carina becoming elevated at junction with dorsum. Dorsum with maximum height at one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell approximately as large as third apical cell, slightly larger than each of first and second apicals, reaching costal margin; fifth apical cell almost entirely concealed by pronotum; subcostal cell weakly coriaceous and sparsely and distinctly punctate over basal five-sixths; apical limbus broad; veins prominent.

Pronotum pale brownish yellow, metopidium with an irregular slightly darker band on each side from above internal angle of eye to midline at junction with dorsum, the band continuing indistinctly posteriorly to anterior margin of second lateral indentation; median carina anterior and posterior to second lateral indentation very narrowly edged with dark brown; head yellowish brown, unmarked; ventral surface of thorax, legs, abdomen, veins and coriaceous areas of tegmen pale yellowish brown; apical limbus and cells of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft directed vertically, slightly shorter than, and very slightly more than one-quarter maximum width of basal apodeme in lateral aspect; a dense group of small spines over apical two-fifths of anterior surface; gonopore subapical on posterior surface. Paramere massive, more than twice length of shaft; distal process two-fifths total length, a large number of small spines on lateral surfaces, a similar number of spines of various lengths on dorsal surface; basal process more slender, almost parallel-sided, apex slightly upturned, acutely rounded.

This species is distinguished by the low, stepped pronotum and the massive paramere. It differs from the closely related *undulata* in the structure of the male genitalia and the extent to which the tegmen is covered by the pronotum.

MATERIAL EXAMINED.

Holotype ♂, COSTA RICA: Turrialba, 15.vii.1971 (*Becker*) (BMNH).

Paratype. COSTA RICA: 1 ♀, data as holotype (BMNH).

Amastris melina sp. n.

(Text-figs 68, 71, 141, 251, 366)

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.7 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.9 mm, length of pronotum 3.6 mm, maximum height of pronotum 1.4 mm, length of tegmen 3.3 mm. Female: fractionally larger than male, proportionately similar; length of pronotum 3.8 mm, maximum height of pronotum 1.5 mm.

Head with vertex very obscurely and irregularly punctate; medial groove becoming indistinct at level of ocelli. Ocelli large, prominent, closer to the eyes than to each other, situated below centro-ocular line. Frontoclypeus extending for less than one-third its length beyond lower margins of vertex, lateral margins indistinct. Rostrum reaching hind coxae.

Pronotum with length two and a half times maximum height, a very shallow and indistinct indentation on each side at midlength; apex acute, terminating some distance from tips of tegmina. Metopidium slightly less than one and a half times as wide as high, curving regularly dorsally and posteriorly from base to smooth junction with dorsum. Dorsum with maximum height at one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell slightly larger than each of first three apical cells, reaching costal margin between first and second apicals; fourth apical slightly larger than second discoidal; fifth almost completely covered by pronotum; subcostal cell weakly coriaceous over basal third, finely punctate over basal two-thirds; apical limbus broad; veins indistinct.

Head, pronotum, abdomen, ventral surfaces of thorax, legs, coriaceous areas and veins of tegmen pale yellowish brown; pronotum very indistinctly mottled with pale yellow; tarsal claws brown; cells and apical limbus of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft directed vertically, as long as and slightly more than one-third as broad as basal apodeme in lateral aspect; a dense group of small blunt spines over apical third of anterior surface; gonopore subapical on posterior surface. Paramere with distal process slightly less than half total length; numerous small spines on lateral surface; longer spines on dorsal surface; basal process almost parallel-sided, apex rounded.

This is a small species with the pronotum relatively highly elevated and unmarked, and the male genitalia simple.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Parà, Belem, iv.1954 (*Fonseca*) (MZUSP, São Paulo).

Paratype. BRAZIL: 1 ♀, data as holotype (BMNH).

Amastris depressa sp. n.

(Text-figs 59, 118, 172, 259, 311, 357)

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.6 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 1.7 mm, length of pronotum 4.0 mm, maximum height of pronotum 1.3 mm, length of tegmen 3.4 mm.

Female unknown.

Head with vertex irregularly and obscurely punctate, medial groove distinct. Ocelli small, not prominent, much closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for almost half its length beyond lower margins of vertex, lateral and basal margins distinct. Rostrum reaching hind coxae.

Pronotum three times as long as maximum height, without lateral indentations; apex acute, not reaching tips of tegmina. Metopidium approximately one and a half times as wide as high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina low basally, becoming elevated at half distance to junction with dorsum. Dorsum with maximum height slightly less than one-quarter its length posterior to humeral angles, a shallow indentation dorsally slightly posterior to midlength; median carina keel-like.

Tegmen with second discoidal cell equal in size to each of first and third apical cells, much larger than second apical, reaching costal margin narrowly between first and second apicals; fifth apical cell not completely concealed by pronotum; subcostal cell coriaceous and punctate over basal three-eighths; apical limbus broad; veins distinct.

Head, pronotum, abdomen, ventral surfaces of thorax, legs, coriaceous areas and veins of tegmen yellow, unmarked; cells and limbus of tegmen clear hyaline, unmarked; tarsal claws brown.

Male genitalia with aedeagus U-shaped; shaft directed vertically, longer than and as broad as basal apodeme in lateral aspect, a dense group of small blunt spines over slightly more than apical half of anterior surface; gonopore subapical on posterior surface. Paramere small, distal process slightly more than half total length; a few short spines scattered over lateral surfaces; a slightly greater number of much longer spines on dorsal surface; basal process straight, parallel-sided, truncate apically.

This species is distinguished by the low, somewhat depressed, dorsum, and the very simple male genitalia.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Vicosa, Minas Gerais, 3.iv.1933 (*Hambleton*) (MZUSP, São Paulo).

Amastris gregaria sp. n.

(Text-figs 63, 126, 178, 249, 304, 363)

Length of pronotum: male 3.7–4.3 mm, female 4.0–4.5 mm; maximum height of pronotum: male 1.2–1.5 mm, female 1.3–1.6 mm.

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.7 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 1.9 mm, length of pronotum 4.1 mm, maximum height of pronotum 1.2 mm, length of tegmen 3.7 mm. Female: slightly larger than male; pronotum rather more elevated.

Head with vertex finely and obscurely ridged and punctate; medial groove basally distinct, becoming obsolete at level of ocelli. Ocelli large, distinct, slightly closer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal margins obscure. Rostrum reaching hind coxae.

Pronotum with length nearly three and a half times maximum height; sides with a distinct shallow indentation immediately posterior to humeral angle, another at midlength, and a third in posterior third; apex acute, not reaching tips of tegmina. Metopidium more than one and a half times as wide as high; curving dorsally and posteriorly from base to smooth junction with dorsum; median carina arising some distance above base, becoming highly elevated at junction with dorsum. Dorsum with maximum height at one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell approximately equal in size to each of first three apical cells, not reaching costal margin; fifth apical entirely concealed by pronotum; subcostal cell very weakly coriaceous and punctate over basal five-sixths; veins narrow, indistinct; apical limbus broad.

Head, pronotum, abdomen, ventral surfaces of thorax, legs, and coriaceous areas of tegmen pale yellowish brown, unmarked; cells of tegmen unpigmented; veins pale yellow or unpigmented; tarsal claws brown.

Male genitalia with aedeagus U-shaped; shaft directed vertically, as long as basal apodeme; a dense group of short blunt spines over apical half of anterior surface; gonopore large, subapical on posterior surface. Paramere with distal process two-fifths total length; approximately twelve erect spines irregularly scattered on lateral and dorsal surfaces; basal process almost parallel-sided, obtuse apically.

This species is distinguished by its low, unpigmented pronotum with distinct lateral indentations and by the structure of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, PERU: Tingo Maria, forested eastern foothills of Andes, 8.viii.1971 (*Broomfield*) (BMNH).

Paratypes. PERU: 16 ♂, 31 ♀, data as holotype, 2–14.viii.1971 (BMNH); 2 ♂, 1 ♀, Chancamayo, 21–23.vii.1960 (*Salazar, Ramirez, Young*) (NCSU, Raleigh); 1 ♂, Tingo Maria, 11.viii.1960 (*Young*) (NCSU); 1 ♀, Iquitos, 5.viii.1960 (*Young, Gonzalez*) (NCSU); 1 ♂, Huanuco, Huallaga River, tropical jungle, iii.1954 (*Waytkowski*) (NCSU).

Amastris funkhouseri Haviland

(Text-figs 11, 82, 202, 253, 305, 364)

Amastris funkhouseri Haviland, 1925 : 251. Holotype ♀, GUYANA (BMNH).

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.7 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.9 mm, length of pronotum 3.8 mm, maximum height of pronotum 1.2 mm, length of tegmen 3.3 mm. Female: slightly larger than male, proportionately similar, length of pronotum 3.7–4.2 mm, maximum height of pronotum 1.2–1.4 mm.

Head with vertex indistinctly and irregularly punctate; medial groove distinct basally, becoming obsolete at level of ocelli. Ocelli very prominent, slightly closer to the eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for two-fifths its length beyond lower margins of vertex, lateral margins distinct. Rostrum just reaching to hind coxae.

Pronotum three times as long as high; sides with a distinct, shallow indentation at one-quarter, one-half and three-quarters distance from metopidium to apex; apex acute, not reaching tips of tegmina. Metopidium twice as wide as high, very slightly inclined anteriorly from base, then curving posteriorly and levelling off slightly above humerals before rising again at junction with dorsum; median carina arising basally, becoming elevated at junction with dorsum. Dorsum with maximum height at one-quarter length, median carina keel-like.

Tegmen with second discoidal cell larger than each of first three apical cells, reaching costal margin between first and second apicals; fifth apical almost completely covered by pronotum; subcostal cell coriaceous over basal five-sixths, often very weakly so, also irregularly and densely punctate; veins narrow, indistinct.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, coriaceous areas of tegmen dull yellow; tarsal claws pale brown; veins of tegmen pale yellow, often unpigmented; cells and apical limbus clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft directed vertically, as long as basal apodeme; numerous small spines over apical half of anterior surface; gonopore large, situated subapically on posterior surface. Paramere very large and robust; distal process two-fifths of total length; numerous small spines on lateral surface; a smaller number of long spines dorsally; basal process slender at base, spatulate apically.

This species is distinguished by the form of the pronotum, the lack of markings, and by the relatively large size of the paramere. It is closely related to, but distinct from, *sabulosa* which overlaps it geographically.

MATERIAL EXAMINED.

Holotype ♀ GUYANA: Kartabo, viii.1922 (*Haviland*) (BMNH).

BRAZIL: 1 ♂, São Paulo, v.1953 (*Fonseca*) (MZUSP, São Paulo); 2 ♀, São Paulo, Capital (*Fonseca*) (MZUSP); 1 ♀, M. Geraes, Figueira, ix.1957 (*Fonseca*) (MZUSP); 1 ♀, Muriqui, vii.1969 (*Alvarenga*) (UP, Curitiba). VENEZUELA: 2 ♀, San Esteban, 22.xi.1939 (*Anduze*) (MZUSP).

Amastris inornata sp. n.

(Text-figs 12, 86, 162, 254, 306, 359)

Length of pronotum 3.8–4.0 mm; maximum height of pronotum 1.3–1.4 mm.

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.7 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maxi-

mum width of pronotum 1.9 mm, length of pronotum 4.0 mm, maximum height of pronotum 1.3 mm, length of tegmen 3.8 mm.

Female: unknown.

Head with vertex irregularly ridged and obscurely punctate; medial groove becoming obscure at level of ocelli. Ocelli large, prominent, slightly closer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, basal margins indistinct. Rostrum reaching middle coxae.

Pronotum three times as long as maximum height; sides with a shallow and indistinct indentation at midlength and another in posterior third; apex acute, reaching to near tips of tegmina. Metopidium one and a half times as wide as high, rising dorsally from base, then curving posteriorly to smooth junction with dorsum; median carina becoming elevated near midlength. Dorsum with maximum height at one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell equal in size to second apical cell, very slightly larger than each of first and third apicals, not reaching costal margin; fifth apical cell almost completely covered by pronotum; subcostal cell coriaceous and densely punctate over basal third, medial third much more weakly coriaceous with punctuation smaller and more scattered; apical limbus broad; veins distinct.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, coriaceous areas of tegmen dull yellow; tegmen with veins very pale yellow, scarcely pigmented, cells and apical limbus clear hyaline.

Male genitalia with aedeagus U-shaped; shaft as long as basal apodeme, slightly expanded apically in posterior aspect; a dense cluster of small blunt spines over apical half of anterior surface; gonopore subapical on posterior surface. Paramere with distal process slightly less than one-third total length; numerous small spines on lateral and dorsal surfaces; basal process parallel-sided; apex sinuate, acutely rounded.

This species is distinguished by the presence of lateral pronotal indentations, the lack of dark pigmentation, and the structure of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, PARAGUAY: Chaco (*Fiebrig*) (BMNH).

Paratype. PARAGUAY: 1 ♂, data as holotype (BMNH).

Amastris janae sp. n.

(Text-figs 53, 116, 177, 256, 312, 351)

Male: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.5 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.4 mm, width of clypeus 0.5 mm, maximum width of pronotum 1.6 mm, length of pronotum 3.4 mm, maximum height of pronotum 1.1 mm, length of tegmen 3.1 mm.

Female: unknown.

Head with vertex very finely and irregularly ridged and punctate; medial groove becoming obscure at level of ocelli. Ocelli distinct, slightly closer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, lateral and basal margins indistinct. Rostrum reaching hind coxae.

Pronotum with length more than three times maximum height, without lateral indentations; apex acute, not reaching tips of tegmina. Metopidium nearly twice as wide as high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina arising basally, becoming gradually more elevated towards junction with dorsum. Dorsum with maximum height at one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell almost as large as fourth apical cell, much larger than each of first three apicals, reaching costal margin narrowly between first and second apicals; second apical cell very small; fifth apical not completely concealed by pronotum; subcostal cell weakly coriaceous and irregularly punctate over basal third; apical limbus broad; veins narrow, distinct.

Pronotum, frontoclypeus, ventral surface of thorax, legs, abdomen, coriaceous areas and veins of tegmen, pale brownish yellow, vertex and basal area of metopidium, reddish brown; cells of tegmen clear hyaline, unmarked; tarsal claws pale brown.

Male genitalia with aedeagus U-shaped; shaft slightly longer than basal apodeme, very slender in posterior aspect, directed vertically; a dense group of small blunt spines over apical half of anterior surface; gonopore small, subapical on posterior surface. Paramere slender; distal process one-third total length; numerous scattered spines on dorsal and lateral surfaces; basal process slightly tapered, apex acute.

This species is distinguished by the area of the exposed tegmen, colour, and the structure of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Mato Grosso, 12°50' S 51°47' W, gallery forest, i.x.1968 (*Richards*) (BMNH).

This specimen was collected on the Royal Society / Royal Geographical Society Xavantina / Cachimbo Expedition 1967-69.

Amastris maculata Funkhouser

(Text-figs 36, 102, 186, 255, 308, 360)

Amastris maculata Funkhouser, 1922 : 31. Holotype ♀, BRAZIL (USNM, Washington) [examined].

Length of pronotum: male 3.5-3.7 mm; maximum height of pronotum: male 1.2-1.4 mm.

Male: width of vertex excluding eyes 1.2 mm, width of vertex including eyes 1.8 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.1 mm, length of pronotum 3.7 mm, maximum height of pronotum 1.4 mm, length of tegmen 3.5 mm. Female: slightly larger than male, pronotum more elevated; length of pronotum 4.0 mm, maximum height 1.5 mm.

Head with vertex very densely, irregularly and distinctly punctate; medial groove often distinct throughout. Ocelli prominent, equidistant between each other and eyes, situated on centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex; basal and lateral margins distinct. Rostrum reaching just beyond hind coxae.

Pronotum three times as long as high in males and, approximately two and a half times as long as high in females; sides without indentations; apex acutely rounded, terminating well before tips of tegmina. Metopidium nearly twice as broad as high, curving dorsally and posteriorly from base, levelling off very slightly just anterior to level of humeral angles, then rising more steeply again to junction with dorsum; median carina arising basally, distinct, low, becoming elevated near junction with dorsum. Dorsum with maximum height at one-quarter distance from metopidium to apex; median carina keel-like.

Tegmen with second discoidal cell equal in size to each of first and fourth apical cells, often reaching costal margin between first and second apicals; fifth apical not completely concealed by pronotum; subcostal cell coriaceous and distinctly punctate over basal seven-eighths; veins narrow, indistinct.

Head, central area of metopidium, ventral surfaces of thorax and abdomen, femora, and basal half of coriaceous area of subcostal cell dark brown or black; clypeus and central part

of vertex often slightly paler; remainder of pronotum, coriaceous areas of tegmen other than basal half on subcostal cell, and lateral surfaces of abdomen pale yellowish; ocelli shining, yellow; cells of tegmen unpigmented; veins either pale yellow or unpigmented; tibiae yellowish brown basally, darker apically, concolorous with femora; tarsi yellowish, claws brown.

Male genitalia with aedeagus U-shaped; shaft directed vertically, as long as basal apodeme; a dense group of small spines over apical half of anterior surface; gonopore large, situated subapically on posterior surface. Paramere with distal process more than one-third total length, robust; numerous spines on lateral and dorsal surfaces; a very long spine on dorsal surface; basal process approximately parallel-sided, apex upturned.

This species is distinguished by the very distinctive dark pigmentation of the pronotum, head, and ventral surfaces; and the structure of the male genitalia.

MATERIAL EXAMINED.

Holotype ♀, BRAZIL: Manaus, Flores, 7.xi.1919 (USNM, Washington).

Paratype. BRAZIL: 1 ♂, Campinas, iii.1924[?] (*Williams*) (USNM).

BRAZIL: 1 ♂, Aimoves, São Paulo, ix.1942 (*Fonseca*) (MZUSP, São Paulo). PARAGUAY: 2 ♂, S. Bernadino (*Fiebrig*) (BMNH).

This species has also been recorded from Colombia (Richter, 1942 : 409).

Amastris inermis sp. n.

(Text-figs 51, 114, 194, 257, 309, 365)

Length of pronotum: male 4.2–4.3 mm, female 4.2–4.6 mm; maximum height of pronotum: male 1.4–1.5 mm, female 1.4–1.6 mm.

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.8 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 2.0 mm, length of pronotum 4.2 mm, maximum height of pronotum 1.5 mm, length of tegmen 3.8 mm. Female: slightly larger than male, similar in proportions.

Head with vertex obscurely punctate; medial groove distinct throughout. Ocelli small, prominent, equidistant between each other and eyes, situated slightly below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, lateral and basal margins distinct. Rostrum reaching hind coxae.

Pronotum with length three times maximum height, without lateral indentations; apex acute, reaching to near tips of tegmina. Metopidium one and a half times as wide as high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina arising near base, low, becoming highly elevated at junction with dorsum. Dorsum with maximum height at approximately one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell extremely large, much larger than each of first three apical cells, reaching costal margin broadly between first and second apicals; fourth apical cell partially concealed by pronotum; fifth apical entirely concealed; subcostal cell weakly coriaceous and punctate over basal three-quarters; apical limbus broad; veins distinct.

Head and pronotum dull yellow, median carina narrowly edged with black and with irregular dark brown spots; tegmen with veins pale yellow; basal part of subcostal cell pale brown; apical limbus and posterior half of third apical cell dark brown; ventral surfaces of thorax, abdomen, and legs pale brown, slightly darker than pronotum; tarsi with apices slightly darker; femora with apices slightly paler.

Male genitalia with aedeagus U-shaped; shaft directed vertically, slightly longer than and approximately one-third breadth of basal apodeme in lateral aspect; a group of small blunt spines over apical half of anterior surface; gonopore subapical on posterior surface. Paramere

with distal process less than half total length; twelve or more spines on dorsal and lateral surfaces; basal process approximately parallel-sided, apex slightly upturned, narrowly rounded.

This species is distinguished by the pigmentation of the pronotum and tegmen and by the proportions of the male genitalia.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Mato Grosso, 12°49' S 51°45' W, gallery forest, 30.xii.1968 (*Knight*) (BMNH).

Paratypes. BRAZIL: 3 ♀, data as holotype, 4.i.1969, and 16.xii.1968 (BMNH); 1 ♂, 2 ♀, Para, Belém, 1945 (*Fonseca*) (MZUSP, São Paulo); 1 ♂, 2 ♀, data as preceding (BMNH); 1 ♀, São Paulo, Stararé [?], 1928 (*Fonseca*) (MZUSP); 1 ♀, São Paulo, Campos do Jordao, 16.xii.1944 (*Lane*) (MZUSP).

The holotype was collected on the Royal Society / Royal Geographical Society Xavantina / Cachimbo Expedition 1967-69.

Amastris sakakibara sp. n.

(Text-figs 34, 97, 188, 258, 310, 348)

Length of pronotum: male 3.7-4.0 mm, female 4.2-4.4 mm; maximum height of pronotum: male 1.3 mm, female 1.4-1.5 mm.

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.8 mm, length of vertex to base of clypeus 0.45 mm, length of clypeus 0.45 mm, width of clypeus 0.45 mm, maximum width of pronotum 2.0 mm, length of pronotum 4.0 mm, maximum height of pronotum 1.3 mm, length of tegmen 3.5 mm. Female: somewhat larger than male, similar in proportion.

Head with vertex distinctly and irregularly punctate, medial groove distinct basally, becoming obscure near level of ocelli. Ocelli distinct, very slightly nearer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex; basal margins obscure. Rostrum reaching hind coxae.

Pronotum with length approximately three times maximum height, sides without indentations; apex acute, not reaching tips of tegmina. Metopidium one and a half times as wide as high; curving dorsally and posteriorly from base, levelling off very slightly above humeral angles, then rising again to smooth junction with dorsum; median carina arising near base, gradually becoming elevated towards junction with dorsum. Dorsum with maximum height at one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell as large as fourth apical cell, reaching costal margin narrowly between first and second apicals; first three apical cells smaller than second discoidal; fifth almost completely concealed by pronotum; subcostal cell coriaceous and strongly and distinctly punctate over basal five-sixths; apical limbus broad; veins distinct.

Head pale brown, mottled with darker brown punctation; pronotum pale yellow, median carina narrowly edged with black; metopidium with dark brown punctation centrally, an irregular dark brown band arising above internal angle of each eye and, gradually converging to midline at junction with dorsum; ventral surface of thorax, hind femora, basal part of coriaceous areas of tegmen adjacent to thorax, and exposed part of apical limbus dark brown; abdomen, remainder of legs, veins and posterior parts of coriaceous areas of tegmen concolorous with sides of pronotum; cells of tegmen clear hyaline, unmarked.

Male genitalia with aedeagus U-shaped; shaft distinctly longer than basal apodeme, directed vertically; a dense group of small blunt spines over apical half of anterior surface; gonopore large, subapical on posterior surface. Paramere with distal process nearly half total length;

a few short spines on lateral and dorsal surfaces; basal process with apex slightly upturned, acute.

This species is closely related to *maculata*, but is distinguished by the pigmentation on the tegmen, the proportions of the aedeagus and the arrangement and number of spines on the parameres. The degree of pigmentation on the pronotum is variable although the dark bands on the metopidium are always present to some extent.

MATERIAL EXAMINED.

Holotype ♂, BRAZIL: Barbagena, 14-15.ii.1962 (*Alvarenga*) (UP, Curitiba).

Paratypes. BRAZIL: 1 ♀, data as holotype (UP); 1 ♂, data as holotype (BMNH); 1 ♀, St Vitoria, ii.1970 (*Oliviera*) (UP); 1 ♀, St Vitoria, ii.1970 (*Oliviera*) (BMNH); 2 ♂, Para, Belem, 1948 (*Fonseca*) (MZUSP, São Paulo); 1 ♂, Para, Belem, 1948 (*Fonseca*) (BMNH); 1 ♀, São Paulo, Adua Salles xii.1936 (*Fonseca*) (MZUSP). BOLIVIA: 1 ♀ Buena Vista, 8.iv.1950 (*Pena*) (NCSU, Raleigh). PARAGUAY: 1 ♀, S. Bernadino (*Fiebrig*) (BMNH).

Amastris compacta (Walker) sp. rev.

(Text-figs 64, 125, 193)

Thelia compacta Walker, 1858 : 140. Holotype ♀, BRAZIL (BMNH) [examined].

Female: width of vertex excluding eyes 1.2 mm, width of vertex including eyes 1.8 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 1.9 mm, length of pronotum 4.3 mm, maximum height of pronotum 1.8 mm, length of tegmen 3.3 mm.

Male unknown.

Head with vertex almost flat, obscurely ridged and punctate, medial groove distinct basally, becoming obscure towards junction with base of frontoclypeus. Ocelli distinct, slightly nearer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for one-quarter its length beyond lower margins of vertex, margins indistinct. Rostrum reaching posterior coxae.

Pronotum slightly less than two and a half times as long as high; sides without indentations; apex reaching tips of tegmina. Metopidium slightly wider than high, rising dorsally from base to smooth junction with dorsum; median carina low basally, becoming more prominent towards dorsum. Dorsum highest above humeral angles, median carina keel-like.

Tegmen with second discoidal cell reaching costal margin between first and second apical cells; second and third apical cells small; fifth almost entirely concealed by pronotum; subcostal cell weakly coriaceous and densely punctate over basal three-quarters; apical limbus broad; veins distinct.

Head, pronotum, abdomen, coriaceous areas and veins of tegmen, and femora yellowish brown; ocelli yellow, shining; ventral surface of thorax and apices of tibiae slightly darker brown; tarsi pale yellowish brown; cells of tegmen and wing clear hyaline.

This is a medium sized species with the pronotum moderately elevated and without dark pigmentation.

This species was synonymized with *A. citrina* (Fairmaire) by Goding (1929 : 265). It has not been possible to confirm or disprove this synonymy, and *compacta* is therefore regarded as a valid species.

MATERIAL EXAMINED.

Holotype ♀, BRAZIL: Santarem (*Bates*) (BMNH).

Amastris consanguinea Stål sp. rev.

(Text-figs 9, 135, 205)

Amastris consanguinea Stål, 1862 : 30. Holotype ♀, BRAZIL (NR, Stockholm) [examined].

Female: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.6 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.5 mm, width of clypeus 0.45 mm, maximum width of pronotum 1.8 mm, length of pronotum 4.0 mm, maximum height of pronotum 1.0 mm, length of tegmen 3.5 mm.

Male unknown.

Head with vertex almost flat, sparsely and irregularly ridged and punctate; medial groove distinct basally, becoming obsolete towards junction with frontoclypeus. Ocelli small, not prominent, slightly closer to eyes than to each other, situated just below centro-ocular line. Frontoclypeus extending little more than one-quarter its length beyond lower margins of vertex, basal margins indistinct. Rostrum reaching hind coxae.

Pronotum four times as long as high; sides with a shallow and indistinct indentation immediately posterior to humeral angles, another at midlength, and a third in posterior third; posterior apex reaching to near tips of tegmina. Metopidium twice as wide as high; curving dorsally and posteriorly from base to junction with dorsum; median carina low throughout. Dorsum with maximum height immediately anterior to midlength, smoothly rounded; median carina prominent but not elevated.

Tegmen with second discoidal cell approximately equal in size to each of first and second apical cells, not reaching costal margin; third apical cell very large; subcostal cell weakly coriaceous and weakly punctate over basal four-fifths, more heavily coriaceous and punctate over basal third. Apical limbus broad. Veins distinct.

Head, pronotum, ventral surface of thorax, abdomen, legs, coriaceous areas and veins of tegmen dull, pale brown; ocelli yellow, shining; cells of tegmen and wing clear hyaline; tarsal claws brown.

This is a medium sized species, with a very low pronotum.

This species was synonymized with *simillima* Stål by Goding (1929 : 265). However, a comparison of the types of the two species conducted during the present study has proved this synonymy to be in error. *A. consanguinea* is therefore reinstated as a valid species.

MATERIAL EXAMINED.

Holotype ♀, BRAZIL: Rio de Janeiro (Stål Collection) (NR, Stockholm).

Amastris elevata Funkhouser

(Text-figs 30, 94, 165)

Amastris elevata Funkhouser, 1922 : 27. Holotype ♀, PERU (USNM, Washington) [examined].

Female: width of vertex excluding eyes 1.5 mm, width of vertex including eyes 2.4 mm, length of vertex to base of clypeus 0.55 mm, length of clypeus 0.6 mm, width of clypeus 0.6 mm, maximum width of pronotum 2.9 mm, length of pronotum 6.4 mm, maximum height of pronotum 3.2 mm, length of tegmen 4.8 mm.

Male unknown.

Head with vertex almost flat, ridged and very indistinctly punctate; medial groove very indistinct. Ocelli small, slightly nearer to eyes than to each other, situated just below centro-ocular line. Frontoclypeus extending slightly less than a quarter its length beyond lower margins of vertex; lateral margins distinct apically. Rostrum reaching mid coxae.

Pronotum twice as long as high, sides without indentations; apex reaching tips of tegmina. Metopidium slightly wider than high, inclined slightly anteriorly from base, then curving posteriorly to junction with dorsum; median carina gradually becoming highly elevated above head, very prominent and keel-like on dorsum. Dorsum with maximum height immediately posterior to humeral angles.

Tegmen with second discoidal cell approximately equal in size to second apical cell, not reaching costal margin, smaller than first apical cell; third apical cell very small; fifth completely covered by pronotum; subcostal cell weakly coriaceous and densely punctate over basal three-quarters; apical limbus broad; veins distinct.

Head, pronotum, abdomen, ventral surfaces of thorax, legs, veins and coriaceous area of tegmen yellowish ochre, pronotum with median carina very narrowly edged with black; ocelli shining, concolorous with vertex; cells and apical limbus of tegmen pale smokey hyaline; tarsal claws brown.

MATERIAL EXAMINED.

Holotype ♀, PERU, Napo River, vi.1920 (USNM, Washington).

The male specimen from the same locality and labelled as 'allotype' is in fact of a different species (see *Amastris pseudoelevata* (p. 388)).

This species has been previously recorded from Guyana and Brazil (Metcalf, 1965 : 873).

Amastris panamensis sp. n.

(Text-figs 18, 77, 154)

Female: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.5 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.2 mm, width of clypeus 0.3 mm, maximum width of pronotum 1.5 mm, length of pronotum 3.0 mm, maximum height of pronotum 1.0 mm, length of tegmen 2.8 mm.

Male unknown.

Head with vertex very finely and densely punctate; medial groove obscure. Ocelli very small, distinct, one and a half times as far from each other as from eyes, situated on centro-ocular line. Frontoclypeus extending only slightly beyond lower margins of vertex; basal margins obscure. Rostrum extending slightly beyond hind coxae.

Pronotum with length three times maximum height, without lateral indentations; apex acute, not reaching tips of tegmina. Metopidium one and a half times as wide as high, rising dorsally from base, then curving posteriorly to smooth junction with dorsum; median carina low, becoming very gradually elevated towards dorsum. Dorsum with maximum height at one-fifth distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell approximately equal in size to third apical cell, slightly smaller than each of first and second apicals, not reaching costal margin; fifth apical cell almost completely concealed by pronotum; subcostal cell weakly coriaceous and sparsely punctate over basal seven-eighths; apical limbus broad; veins narrow, distinct.

Head, pronotum, abdomen, coriaceous areas and veins of tegmen, dull yellowish brown, ventral surface of thorax and femora dark brown; cells and apical limbus of tegmen clear hyaline.

This is a small species, distinguished by the structure of the head and by the pigmentation.

MATERIAL EXAMINED.

Holotype ♀, PANAMA: Pacora, 19.xi.1945 (*Stage*) (USNM, Washington).

Amastris arquata sp. n.

(Text-figs 13, 132, 155)

Female: width of vertex excluding eyes 0.9 mm, width of vertex including eyes 1.5 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.6 mm, length of pronotum 3.4 mm, maximum height of pronotum 1.1 mm, length of tegmen 3.0 mm.

Male unknown.

Head with vertex finely and irregularly wrinkled, obscurely punctate; medial groove becoming obscure towards junction with clypeus. Ocelli large, prominent, nearly one and a half times as far from each other as from eyes; situated immediately above centro-ocular line. Frontoclypeus extending one-quarter its length beyond lower margins of vertex, basal margins indistinct. Rostrum reaching just beyond hind coxae.

Pronotum with length very slightly more than three times maximum height; sides very shallowly and obscurely indented at midlength; apex narrowly rounded in lateral aspect, reaching to near tips of tegmina. Metopidium nearly twice as wide as high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina arising above base, low, becoming elevated at junction with dorsum. Dorsum with maximum height approximately one-quarter distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell equal in area to second apical cell, larger than each of first and third apicals, reaching costal margin narrowly between first and second apicals; fifth apical entirely concealed by pronotum; subcostal cell weakly coriaceous and densely punctate over basal three-quarters; apical limbus broad; veins distinct.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, coriaceous areas and veins of tegmen, pale yellowish brown, cells of tegmen clear hyaline, tarsal claws brown.

This is a rather drab species with a low unmarked pronotum.

MATERIAL EXAMINED.

Holotype ♀, FRENCH GUIANA: Guyane (*Maroni*) (NCSU, Raleigh).

Amastris sulphurea sp. n.

(Text-figs 60, 128, 199)

Female: width of vertex excluding eyes 1.2 mm, width of vertex including eyes 1.9 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.6 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.3 mm, length of pronotum 4.8 mm, maximum height of pronotum 1.5 mm, length of tegmen 3.8 mm.

Male unknown.

Head with vertex very finely and irregularly ridged and punctate; medial groove obsolete. Ocelli large, prominent, slightly nearer eyes than to each other, situated on centro-ocular line. Frontoclypeus extending for nearly half its length beyond lower margins of vertex, lateral and basal margins obscure. Rostrum reaching posterior coxae.

Pronotum with length slightly more than three times maximum height; sides with a shallow indentation slightly posterior to humeral angle and another at midlength between humeral angle and apex; apex acute, reaching to near tips of tegmina. Metopidium twice as wide as high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina distinct, not highly elevated. Dorsum with maximum height at slightly more than one-quarter distance from humeral angles to apex; median carina prominent but not keel-like.

Tegmen with second discoidal cell approximately equal in size to each of first and fourth apical cells, larger than each of second and third apicals, not reaching costal margin; fifth

apical cell not entirely covered by pronotum; subcostal cell weakly coriaceous and punctate over basal three-quarters; apical limbus broad; veins distinct.

Head, pronotum, ventral surface of thorax, legs, abdomen, and veins and coriaceous areas of tegmen pale yellow, a distinct white band on pronotum along each lower lateral margin a short distance posterior to humeral angle and extending halfway to posterior apex; tegmen with veins pale brown, cells and limbus pale yellow hyaline; tarsal claws pale brown.

This species is distinguished by its low pronotum with lateral indentations; and by the distinct pale lateral markings.

MATERIAL EXAMINED.

Holotype ♀, PERU: Callanga, Paucartambo, Cusco, 19.ii.1952 (*Waytkowski*) (NCSU, Raleigh).

Amastris revelata sp. n.

(Text-figs 5, 83, 153)

Both specimens the same size.

Female: width of vertex excluding eyes 1.3 mm, width of vertex including eyes 2.1 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.6 mm, width of clypeus 0.6 mm, maximum width of pronotum 2.3 mm, length of pronotum 4.5 mm, maximum height of pronotum 1.5 mm, length of tegmen 4.3 mm.

Male unknown.

Head with vertex densely and distinctly punctate; medial groove distinct basally. Ocelli small, distinct, equidistant between each other and eyes, situated immediately below centro-ocular line. Frontoclypeus extending for less than one-third its length beyond lower margins of vertex, basal margins obscure. Rostrum reaching hind coxae.

Pronotum with length slightly greater than three times maximum height, without lateral indentations; apex acute, not reaching tips of tegmina. Metopidium wider than high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina gradually becoming elevated towards dorsum. Dorsum with maximum height at one-fifth distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell as large as fourth apical cell, very much larger than each of first three apical cells, reaching costal margin broadly between first and second apicals; subcostal cell weakly coriaceous and strongly yet sparsely punctate over basal three-quarters; apical limbus broad; veins narrow, distinct.

Sides of pronotum and abdomen, coriaceous part of anal area and veins of tegmen pale greenish yellow; median carina sometimes with irregular pale brown spots; metopidium with either a dark brown mark above internal angle of each eye extending to supra-ocular callosity, or an irregular broad brown stripe extending from base above internal angle of each eye to midline slightly below junction with dorsum, median carina pale brown basally; head yellowish, vertex irregularly mottled with brown, lower lateral margins narrowly edged with black; ventral surface of thorax, and femora dark brown, almost black; basal part of subcostal cell, tibiae, and tarsi paler brown; ventral surface of abdomen dull brown; tegmen with cells clear hyaline, apical limbus pale brownish.

This species has the pronotum only moderately elevated and is distinguished by the contrast between the very dark pigmentation of the ventral surfaces and the

bright greenish yellow of the pronotum. The markings on the metopidium, though variable, are also distinctive.

MATERIAL EXAMINED.

Holotype ♀, BRAZIL: Jatai, Goiás, xi.1972 (*Oliveira*) (BMNH).

Paratype. BRAZIL: 1 ♀, data as holotype (BMNH).

Amastris sabulosa Funkhouser

(Text-figs 45, 105, 196)

Amastris sabulosa Funkhouser, 1922 : 29. Holotype ♀, BRAZIL (USNM, Washington) [examined].

Female: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.5 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.8 mm, length of pronotum 3.4 mm, maximum height of pronotum 1.1 mm, length of tegmen 2.8 mm.

Male unknown.

Head with vertex obscurely ridged and punctate; medial groove distinct throughout. Ocelli large, very prominent, closer to eyes than to each other, situated below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, lateral and basal margins distinct. Rostrum reaching hind coxae.

Pronotum with length three times maximum height, sides with a shallow indentation immediately posterior to humeral angles, another at midlength and a third in posterior third; apex acute, reaching to near tips of tegmina. Metopidium nearly twice as wide as high, curving dorsally and posteriorly from base, levelling off very slightly above humerals, then gradually rising again to smooth junction with dorsum; median carina prominent, becoming elevated where curvature of metopidium levels off. Dorsum with maximum height at approximately one-third distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell larger than any of first three apical cells, approximately equal in size to fourth apical cell, reaching costal margin between first and second apicals; fifth apical cell not entirely concealed by pronotum; subcostal cell weakly coriaceous and densely punctate over basal six-sevenths; apical limbus broad; veins prominent.

Head and dorsum indistinctly mottled with yellow and brown; metopidium dull, yellowish brown with an indistinct brownish band on each side from base above internal margin of eyes, to midline immediately anterior to junction with dorsum; median carina of dorsum with scattered dark brown spots; ventral surface of thorax, abdomen, femora, coriaceous areas and majority of veins of tegmen yellowish brown; veins of first, second and third apical cells adjacent to costal margin, and branches of radial vein brown; cells and apical limbus clear hyaline; tibiae with apices dark brown; tarsi of middle and hind legs dark brown, almost black.

This species is distinguished by the proportions and mottled pigmentation of the pronotum. The male is unknown, the allotype being a different species to the holotype.

MATERIAL EXAMINED.

Holotype ♀, BRAZIL: Flores, Manaus, 7.xi.1919 (USNM, Washington).

Amastris straminea sp. n.

(Text-figs 6, 84, 146)

Length of pronotum 4.3–4.6 mm, maximum height of pronotum 1.8–2.0 mm.

Female: width of vertex excluding eyes 1.2 mm, width of vertex including eyes 1.9 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.6 mm, maximum width of pronotum 2.0 mm, length of pronotum 4.6 mm, maximum height of pronotum 1.9 mm, length of tegmen 3.9 mm.

Male unknown.

Head with vertex finely and irregularly ridged and punctate, medial groove distinct throughout. Ocelli prominent, distinctly closer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending for one-third its length beyond lower margins of vertex, lateral and basal margins distinct. Rostrum reaching hind coxae.

Pronotum with length two and a half times maximum height, without lateral indentations; apex acute, reaching or very nearly reaching tips of tegmina. Metopidium very slightly wider than high, inclined anteriorly above head, curving dorsally and posteriorly to smooth junction with dorsum; median carina gradually becoming highly elevated at midlength. Dorsum with maximum height at approximately one-seventh distance from humeral angles to apex; median carina keel-like.

Tegmen with second discoidal cell larger than fourth apical cell, much larger than each of first three apicals, reaching costal margin narrowly between first and second apicals; second apical very small; third apical transverse; fifth apical cell larger than all other apical cells and second discoidal together; subcostal cell very weakly coriaceous and irregularly punctate over basal five-sixths; apical limbus broad; veins distinct.

Head, pronotum, abdomen, coriaceous areas and veins of tegmen pale yellowish; ventral surface of thorax, femora and tibiae dark reddish brown; tarsi slightly paler, claws dark brown; cells and apical limbus of tegmen clear hyaline.

This species is distinguished by the highly elevated pronotum, the unpigmented median carina and the distinct darker coloration of the ventral surface of the thorax and legs.

MATERIAL EXAMINED.

Holotype ♀, NICARAGUA: Puerto Cabezas, Zelaya, 4–5.viii.1970 (*Rolston*) (LSU, Baton Rouge).

Paratypes. NICARAGUA: 1 ♀, data as holotype (LSU); 1 ♀, data as holotype (BMNH).

Amastris fallax Stål sp. rev.

(Text-figs 8, 89, 156)

Amastris fallax Stål, 1860 : 30. Holotype ♀, BRAZIL (NR, Stockholm) [examined].

Female: width of vertex excluding eyes 1.4 mm, width of vertex including eyes 2.1 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.3 mm, length of pronotum 5.2 mm, maximum height of pronotum 1.6 mm, length of tegmen 4.7 mm.

Male unknown.

Head with vertex weakly and irregularly punctate, medial groove distinct. Ocelli small, indistinct, closer to the eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending one-quarter its length beyond lower margins of vertex, lateral and basal margins distinct. Rostrum reaching to hind coxae.

Pronotum more than three times as long as high; sides with a shallow indentation immediately posterior to humeral angle, another at midlength and a third in posterior quarter; apex acute, not reaching tips of tegmina. Metopidium more than twice as wide as high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina arising basally, low, becoming elevated just prior to junction with dorsum. Dorsum highest at one-third distance from head to posterior apex; median carina keel-like.

Tegmen with second discoidal cell about equal in size to each of second and third apical cells, not reaching costal margin; first apical larger; subcostal cell very weakly coriaceous and punctate over basal half; veins distinct.

Head, pronotum, abdomen, ventral surfaces of thorax, legs, and coriaceous areas and veins of tegmen pale yellowish brown; median carina on dorsum darker brown; tegmen pale smoky brown on exposed part of apical limbus; ocelli concolorous with vertex.

The species is distinguished by the low pronotum with lateral indentations and smoothly rounded profile; and by the small; indistinct ocelli.

This species was synonymized with *compacta* Walker by Funkhouser (1927 : 302); however, a comparison of the types of the two species conducted in the present study proved this synonymy to be incorrect; *fallax* is therefore reinstated as a valid species.

MATERIAL EXAMINED.

Holotype ♀, BRAZIL: Rio de Janeiro (*Sahlb.*) (NR, Stockholm).

Amastris peruviana Funkhouser

(Text-figs 50, 112, 183)

Amastris peruviana Funkhouser, 1940 : 286. Holotype ♀, PERU (USNM, Washington) [examined].

Female: width of vertex excluding eyes 1.5 mm, width of vertex including eyes 2.7 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.5 mm, width of clypeus 0.6 mm, maximum width of pronotum 3.2 mm, length of pronotum 6.4 mm, maximum height of pronotum 2.8 mm, length of tegmen 5.0 mm.

Male unknown.

Head with vertex obscurely punctate; medial groove indistinct. Ocelli small, distinct, equidistant between each other and from eyes, situated well below centro-ocular line. Frontoclypeus extending for less than one-quarter its length beyond lower margins of vertex, basal and lateral margins indistinct. Rostrum just reaching to hind coxae.

Pronotum approximately two and one-third times as long as high; sides without indentations; apex acute, reaching tips of tegmen. Metopidium nearly as high as wide, rising vertically above head, then curving posteriorly to smooth junction with dorsum; median carina low and indistinct near base, becoming highly elevated towards junction with dorsum. Dorsum with maximum height immediately posterior to humeral angles; median carina keel-like.

Tegmen with second discoidal cell smaller than each of first and second apical cells, not reaching costal margin; third apical cell very small; fifth apical almost completely concealed by pronotum; subcostal cell weakly coriaceous and punctate over basal five-sixths; veins distinct basally, rather obscure towards apex.

Head, pronotum, ventral surfaces of thorax, abdomen, legs, and veins and coriaceous areas of tegmen dull, pale yellowish brown; cells of tegmen pale brownish hyaline, apical half of second apical, whole of third apical, and adjacent area of apical limbus darker.

This species, known only from the holotype, has the pronotum highly elevated and the tegminal pigmentation distinctive.

MATERIAL EXAMINED.

Holotype ♀, PERU: San Martin, viii.1936 (USNM, Washington).

Amastris projecta Funkhouser

(Text-figs 47, III, 185)

Amastris projecta Funkhouser, 1922 : 28. Holotype ♀, PERU (USNM, Washington) [examined].

Female: width of vertex excluding eyes 1.4 mm, width of vertex including eyes 2.4 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 3.2 mm, length of pronotum 6.8 mm, maximum height of pronotum 2.8 mm, length of tegmen 5.8 mm.

Male unknown.

Head with vertex obscurely punctate; median groove indistinct. Ocelli small, distinct, slightly nearer to eyes than to each other, situated immediately below centro-ocular line. Frontoclypeus extending one-quarter its length beyond lower margins of vertex; basal and internal margins indistinct. Rostrum reaching hind coxae.

Pronotum nearly two and a half times as long as high; sides without indentations; apex acute, reaching tips of tegmina. Metopidium nearly as high as wide, inclined slightly anteriorly above head, then curving posteriorly to smooth junction with dorsum; median carina low basally, becoming abruptly highly elevated at midlength to junction with dorsum. Dorsum with maximum height immediately posterior to humeral angles; median carina very highly elevated, keel-like for two-thirds distance to posterior apex, then distinctly lower.

Tegmen with second discoidal cell approximately equal in size to each of first and second apical cells; third apical cell much smaller; fifth apical not entirely concealed by pronotum; subcostal cell weakly coriaceous and punctate over basal two-thirds; veins distinct.

Head, pronotum, ventral surfaces of thorax, abdomen, and veins and coriaceous area of tegmen dull yellow, median carina of pronotum narrowly edged with black; legs dull yellow, apices of tibiae brownish; tegmen smoky hyaline.

This species is rather similar to *peruviana* but differs in the development of the median carina of the pronotum and the lack of tegminal pigmentation. The holotype is the only specimen available for study.

MATERIAL EXAMINED.

Holotype ♀, PERU: no other data (USNM, Washington).

Amastris simillima Stål

(Text-figs 62, 120, 192)

Amastris simillima Stål, 1862 : 30. Holotype ♀, BRAZIL (NR, Stockholm) [examined].

Female: width of vertex excluding eyes 1.2 mm, width of vertex including eyes 1.9 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.5 mm, maximum width of pronotum 2.2 mm, length of pronotum 4.3 mm, maximum height of pronotum 1.4 mm, length of tegmen 4.0 mm.

Male unknown.

Head with vertex indistinctly and irregularly ridged and punctate; median groove indistinct. Ocelli small, indistinct, slightly nearer to the eyes than to each other, situated on centro-ocular line. Frontoclypeus extending two-fifths its length beyond lower margins of vertex, internal margins obscure. Rostrum reaching hind coxae.

Pronotum three times as long as high; sides with a shallow but distinct indentation immediately posterior to humeral angles, another at midlength, and a third in posterior third; apex acute, not reaching tips of tegmina. Metopidium nearly twice as wide as high; broadly rounded dorsally and posteriorly from base, levelling off slightly immediately posterior to level of humeral angles, then rising again to junction with dorsum; median carina low throughout. Dorsum with maximum height at middistance between anterior surface of metopidium and apex of pronotum; median carina prominent, not keel-like.

Tegmen with second discoidal cell as large as third apical cell, larger than first apical and much larger than second apical; reaching costal margin between first and second apical cells; fifth apical entirely concealed by pronotum; subcostal cell coriaceous and punctate over basal three-quarters, heavily and densely so over basal fifth; apical limbus very narrow, veins distinct.

Head, pronotum, ventral surfaces of thorax and legs, abdomen, coriaceous areas and veins of tegmen pale yellowish brown; tarsal claws slightly darker; cells of tegmen clear hyaline.

This species differs from the closely related *funkhouseri* in the very narrow apical limbus of the tegmen, the more acute posterior apex of the pronotum, the more rounded metopidium, and the very much smaller ocelli. It differs from *specialis* and *undulata* in lacking dark pigmentation on the pronotum and in the structure of the tegminal venation. The holotype is the only specimen available for study.

MATERIAL EXAMINED.

Holotype ♀, BRAZIL: Rio de Janeiro (*Sahlb.*) (NR, Stockholm).

The species has also been recorded from Peru, Colombia and Venezuela (Metcalf 1965 : 876). However, these records are doubtful as specimens have often been wrongly determined as this species.

Amastris discreta sp. n.

(Text-figs 61, 124, 204)

Female: width of vertex excluding eyes 1.0 mm, width of vertex including eyes 1.6 mm, length of vertex to base of clypeus 0.4 mm, length of clypeus 0.4 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.8 mm, length of pronotum 3.7 mm, maximum height of pronotum 1.1 mm, length of tegmen 3.5 mm.

Male unknown.

Head with vertex finely and obscurely punctate; medial groove obsolete. Ocelli small, indistinct, much closer to eyes than to each other, situated on centro-ocular line. Frontoclypeus extending one-third its length beyond lower margins of vertex; basal and lateral margins indistinct. Rostrum reaching beyond hind coxae.

Pronotum with length more than three times height; sides with shallow indentation immediately posterior to humeral angles and again at midlength; apex acute, not reaching tips of tegmina. Metopidium nearly twice as wide as high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina arising immediately above head, low and distinct, becoming more prominent towards junction with dorsum. Dorsum with maximum height approximately one-third distance from humeral angle to apex; median carina keel-like.

Tegmen with second discoidal and fourth apical cells extremely large, both much larger than each of first three apical cells; the former reaching costal margin broadly between first and

second apicals; fifth apical cell not completely concealed by pronotum; subcostal cell coriaceous and punctate over basal five-sixths; apical limbus broad; veins distinct.

Head, pronotum, abdomen, ventral surfaces of thorax, legs, veins and coriaceous areas of tegmen pale brownish yellow; basal half of tegmen semiopaque, pale brownish, separated from clear hyaline apical half by an indistinct transverse, slightly darker brown band, from apical sixth of subcostal cell to apex of vannal fold; veins bounding posterior margins of third and fourth apical cells also brownish.

This species, described from a unique female, is distinguished by the proportions of the pronotum and the tegminal pigmentation.

MATERIAL EXAMINED.

Holotype ♀, BRAZIL: Mato Grosso, 12°50' S 51°45' W, gallery forest, 15.ii.-8.iii. 1968 (*Freeman*) (BMNH).

This specimen was collected on the Royal Society / Royal Geographical Society Xavantina / Cachimbo Expedition 1967-69.

Amastris lycioda Ball

(Text-figs 42, 110, 180, 223, 274, 329)

Amastris lycioda Ball, 1933 : 27. Holotype ♀, U.S.A. (USNM, Washington) [examined].

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.5 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.9 mm, length of pronotum 3.5 mm, maximum height of pronotum 1.1 mm, length of tegmen 3.0 mm.

Female: somewhat larger, pronotum more highly elevated; pronotal length 4.1 mm, maximum height 1.6 mm.

Head with vertex densely and obscurely punctate; medial groove distinct basally, becoming obscure towards base of clypeus. Ocelli distinct, slightly closer to each other than to eyes, situated on centro-ocular line. Frontoclypeus extending for approximately one-third its length beyond lower margins of vertex, lateral margins distinct. Rostrum reaching posterior coxae.

Pronotum two and a half (♀) or three times (♂) as long as high, sides without indentations; apex acute, reaching tips of tegmina (♀) or terminating some distance before (♂). Metopidium much wider than high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina arising near base, distinct but not highly elevated. Dorsum with maximum height at midlength; median carina prominent but not keel-like.

Tegmen with second discoidal cell approximately as large as each of first three apical cells, not reaching costal margin; fifth apical completely concealed by pronotum; subcostal cell weakly coriaceous and punctate over basal three-quarters; veins indistinct.

Head, pronotum, abdomen, ventral surfaces of thorax, legs, and coriaceous areas and veins of tegmen dull, pale brownish yellow; margins of vertex pale brown; cells of tegmen clear.

Male genitalia robust; aedeagus U-shaped; shaft shorter than basal apodeme, directed vertically; a subapical circle of approximately twelve spines on anterior surface, two very acutely pointed, remainder blunt. Paramere with distal process slightly less than half total length, apex very broadly recurved; approximately twelve spines on dorsal, lateral and posterior surfaces; basal process broad, spatulate.

The degree of sexual dimorphism in this species, although slight, is exceptional for the genus. The species is distinguished from the other North American species,

templa, by the acute posterior apex to the pronotum and the arrangement of the spines on the shaft of the aedeagus.

MATERIAL EXAMINED.

Holotype ♀, U.S.A.: Arizona, Tucson, 24.vii.1930 (*Ball*) (USNM, Washington).

Paratype. U.S.A.: 1 ♂, data as holotype (USNM).

Amastris templa Ball

(Text-figs 40, 108, 176, 252, 307, 362)

Amastris templa Ball, 1933 : 27. LECTOTYPE ♂, U.S.A. (USNM, Washington), here designated [examined].

Length of pronotum: male 3.5–3.7 mm, female 4.2 mm; maximum height of pronotum: male 1.0–1.1 mm, female 1.4 mm.

Male: width of vertex excluding eyes 1.1 mm, width of vertex including eyes 1.6 mm, length of vertex to base of clypeus 0.5 mm, length of clypeus 0.5 mm, width of clypeus 0.4 mm, maximum width of pronotum 1.8 mm, length of pronotum 3.6 mm, maximum height of pronotum 1.1 mm, length of tegmen 3.2 mm.

Head with vertex distinctly and densely punctate, medial groove distinct basally, becoming obscure towards base of clypeus. Ocelli small, not prominent, very slightly closer to eyes than to each other, situated very slightly below centro-ocular line. Frontoclypeus extending one-third its length beyond lower margins of vertex, lateral margins distinct. Rostrum reaching to hind coxae.

Pronotum with length more than three times maximum height; without lateral indentations; posterior apex rounded in lateral profile, terminating some distance before tips of tegmina. Metopidium much wider than high, curving dorsally and posteriorly from base to smooth junction with dorsum; median carina arising near base, not highly elevated. Dorsum highest at mid-length; median carina not keel-like, distinct.

Tegmen with second discoidal cell approximately equal in area to each of first and second apical cells, larger than third apical, not reaching to costal margin; fifth apical entirely concealed by pronotum; subcostal cell over basal sixth-sevenths its length, and sub-basal and basal area of basal cells, coriaceous and punctate; veins on basal region indistinct.

Head, pronotum, abdomen, coriaceous areas and veins of tegmen, and tarsi pale yellowish brown; ventral surfaces of thorax, and femora dark brown; cells and apical limbus of tegmen unpigmented.

Genitalia extremely robust. Aedeagus U-shaped; shaft as long as, and almost as broad as basal apodeme in lateral aspect, slender in posterior aspect with apex expanded, with a dense cluster of small spines over subapical half of anterior surface; gonopore large, subapical on posterior surface; basal apodeme almost parallel-sided basally in lateral aspect, tapering apically. Paramere with distal process less than half total length, apex broadly recurved, with scattered small spines on lateral and dorsal surfaces; basal process very broad, almost parallel-sided, apex obtuse.

This species may be distinguished from the other North American representative of the genus, *lycioda*, by the rounded posterior apex to the pronotum and the very distinctive male genitalia. The aedeagus is extremely large in this species in relation to the size of the insect.

MATERIAL EXAMINED.

Lectotype ♂, U.S.A.: Utah, St George, 17.v.1913 (*Ball*) (USNM, Washington).

Paralectotypes: U.S.A.: 1 ♂, 1 ♀, same data as lectotype (USNM).

The three above mentioned specimens are glued to the same card and the specimen here designated as lectotype is indicated by an adjacent red ink spot. There are eight further paralectotypes in the type-series but these were not examined.

NOMINA DUBIA

Amastris citrina (Fairmaire)

Thelia citrina Fairmaire, 1846 : 309. Number and sex of specimens unknown, COLOMBIA (presumed lost).

Amastris citrina (Fairmaire) Goding, 1929 : 264.

The original description reads as follows:

'Length 4.0 mm. Elevata, compressa, flavescens. Forme de la précédente espèce [*Thelia antica* Germar]; très ponctuée, d'un jaune légèrement verdâtre; base des élytres jaune verdâtre; pattes testacées. – Coll. du Muséum.'

There are three specimens in the collection of the museum referred to in the description (MNHN, Paris) which have been regarded as the type-series of this species. One of these specimens bears the label 'Thelia; citrina?; Fairmaire; Venezuela'. However, in view of the fact that the species was described from specimens collected in Colombia, and that the specimens in question are of *Stegaspis viridis* Funkhouser, it is thought best to regard Fairmaire's type-material as being lost.

If it could be proved that the Paris specimens are in fact Fairmaire's type-series of *citrina* (and they, like many other species, fit the inadequate description well enough) then the species would have to be moved to *Stegaspis* Germar, 1833, with the reduction of Funkhouser's specific name to the status of a junior synonym. It is, however, very doubtful if these are Fairmaire's specimens, since he is unlikely to have confused *Thelia* with *Stegaspis*, a genus in which he himself also described a species. On this basis the identity of *Amastris citrina* is inconclusive.

This species was synonymized with *Amastris obtegens* (Fabricius) by Funkhouser (1927 : 303). It has not been possible to confirm or disprove this synonymy.

Amastris antica (Germar)

Membracis antica Germar, 1821 : 16. Number and sex of specimens unknown, BRAZIL [not examined].

Membracis peltata Stoll, 1788 : 61. Number and sex of specimens unknown, SURINAM [not examined].

Hemiptycha antica (Germar) Burmeister, 1835 : 140.

Thelia antica (Germar) Fairmaire, 1846 : 308.

Amastris antica (Germar) Funkhouser, 1927 : 302.

The original description reads as follows:

'Der Scheitel stumpfwinklich dreieckig, punktirt. Der Panzer hinten dachförmig, zusammengedrückt, vorn abgeplattet, im Profil halbkreisförmig, die vordere Ecke abgerundet, die Oberfläche fein punktirt, mit durchlaufender Mittelkante, aber ohne Adern, die Deckschilde

über die Hälfte verdeckt, ganz häutig, nur an der Wurzel des Aussenrandes etwas punktirt. Die Farbe ockergelb, der Kopf dunkler, die Schenkel in der Mitte braun. Die Deckschilde dunkel weingelb, mit braunen Adern. Am vordern platten Theile des Panzers ein caffeebrauner, dreieckiger schwefelgelb begränzter Fleck, dessen Spitze in der grössten Höhe der durchaus braunen Längskante ausläuft. Der Seitenrand des Schildchens ist schwefelgelb schmal eingefasst.'

It has not been possible to examine the type-material of this species, and though specimens of *Amastris exaltata* Walker have been determined by Funkhouser as *antica*, a possible synonymy is unproved, as also are the synonymies with *flavifolia* and *obtegens* proposed by Goding (1929 : 265).

According to Metcalf (1965 : 872), *antica* has been recorded from Surinam, Brazil, Ecuador, Colombia, Venezuela, Panama, Mexico, Guyana and Peru. However, these records must be regarded as doubtful due to the uncertainty of the identity of the species.

SPECIES TRANSFERRED FROM *AMASTRIS*

Adippe inaequalis Fowler

Adippe inaequalis Fowler, 1896 : 136. Lectotype ♀, PANAMA (BMNH) [examined].

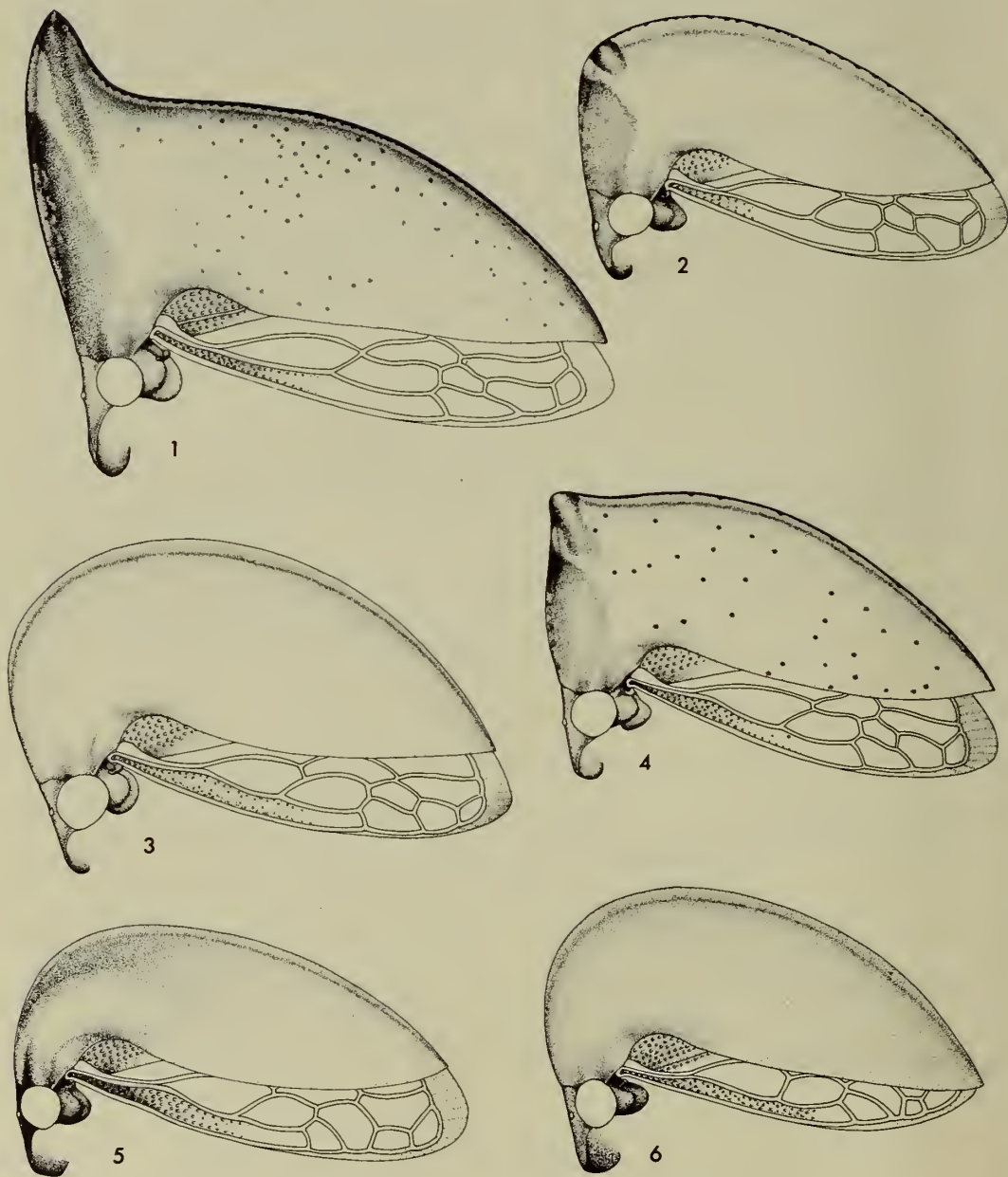
Amastris pacifica Funkhouser, 1943 : 478. Holotype ♀, GUATEMALA (USNM, Washington) [examined]. **Syn. n.**

An examination of the holotype of *Amastris pacifica* Funkhouser has shown it to be a junior synonym of *Adippe inaequalis* Fowler. The name *pacifica* is therefore no longer valid for a species of *Amastris*.

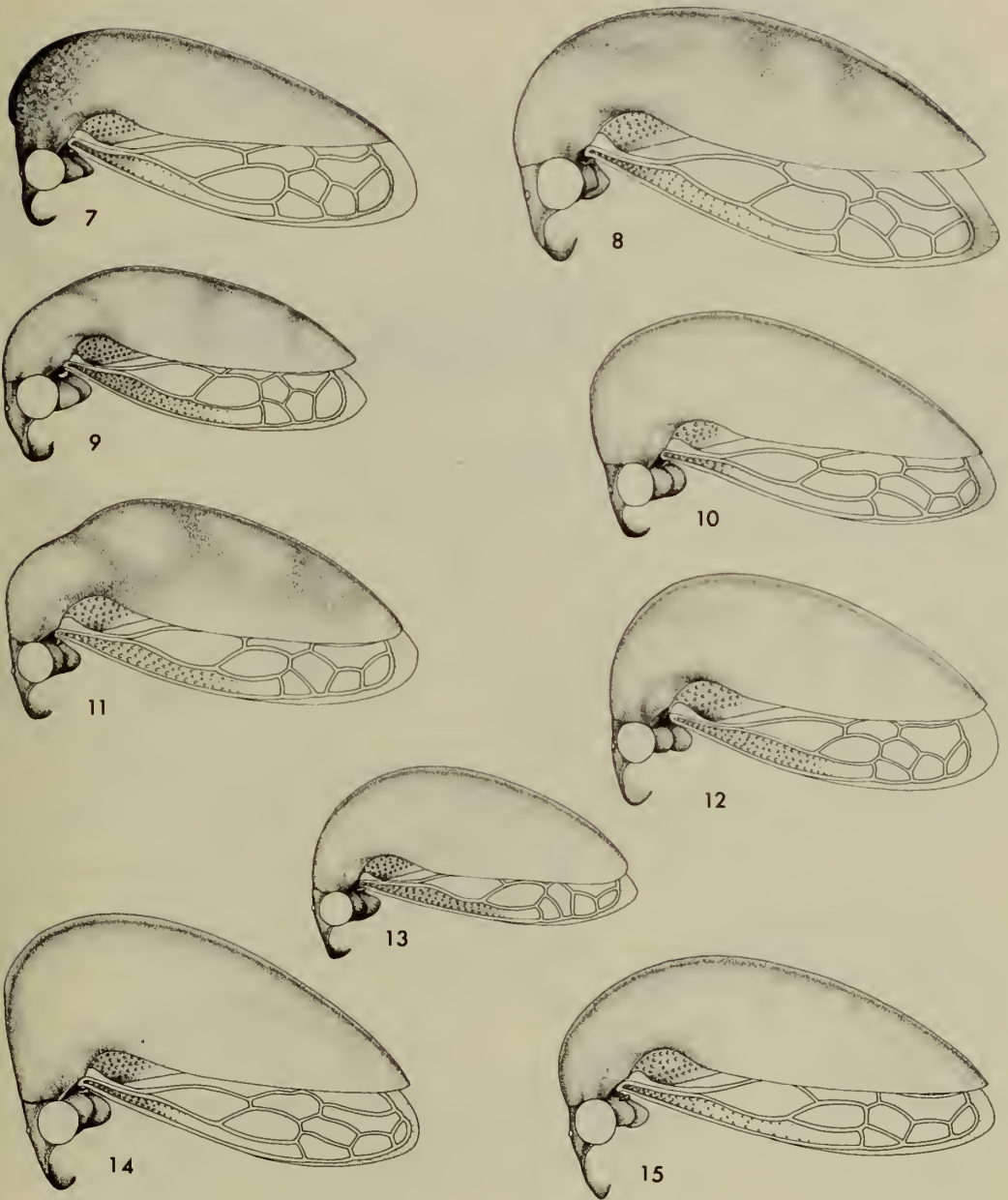
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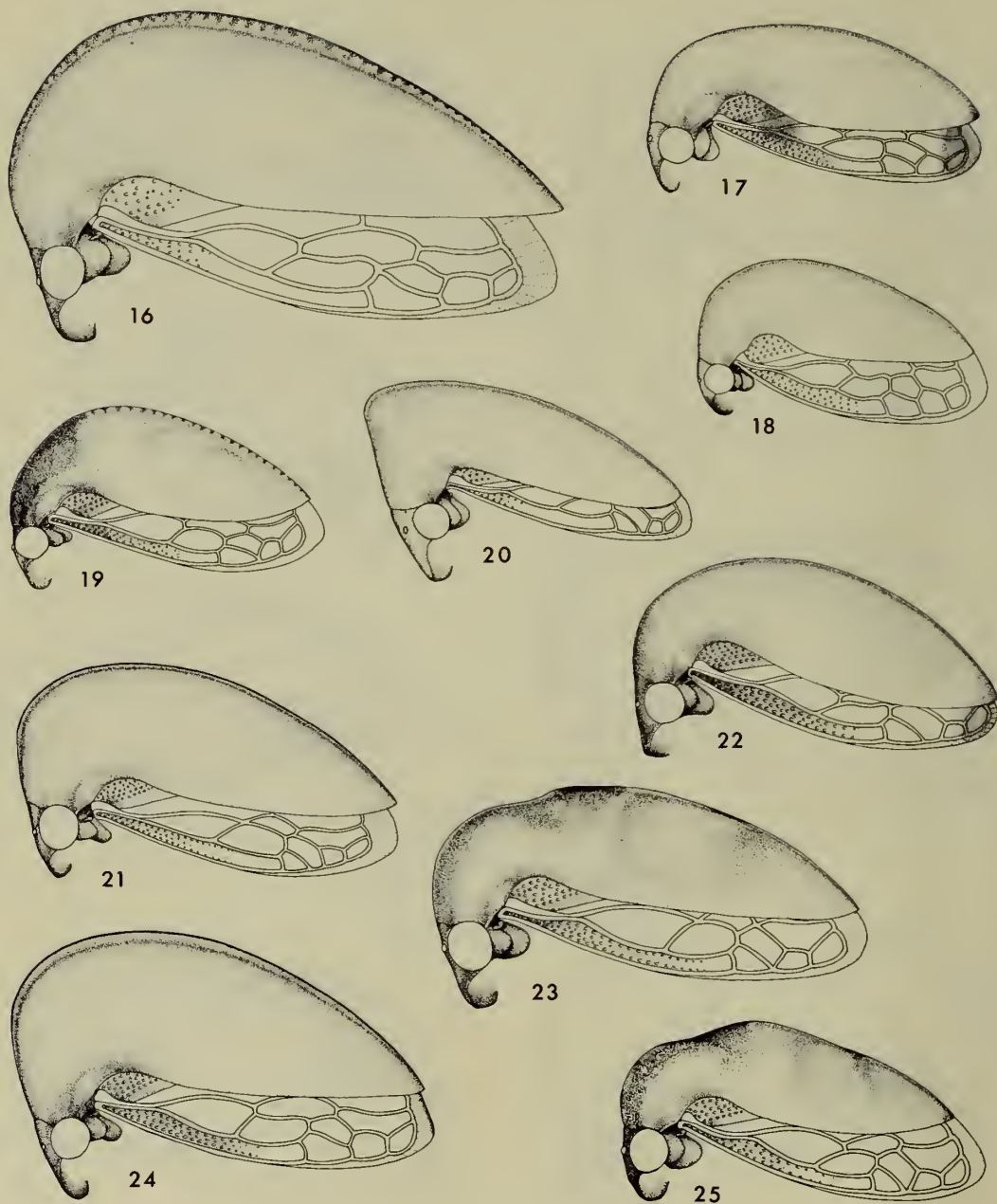
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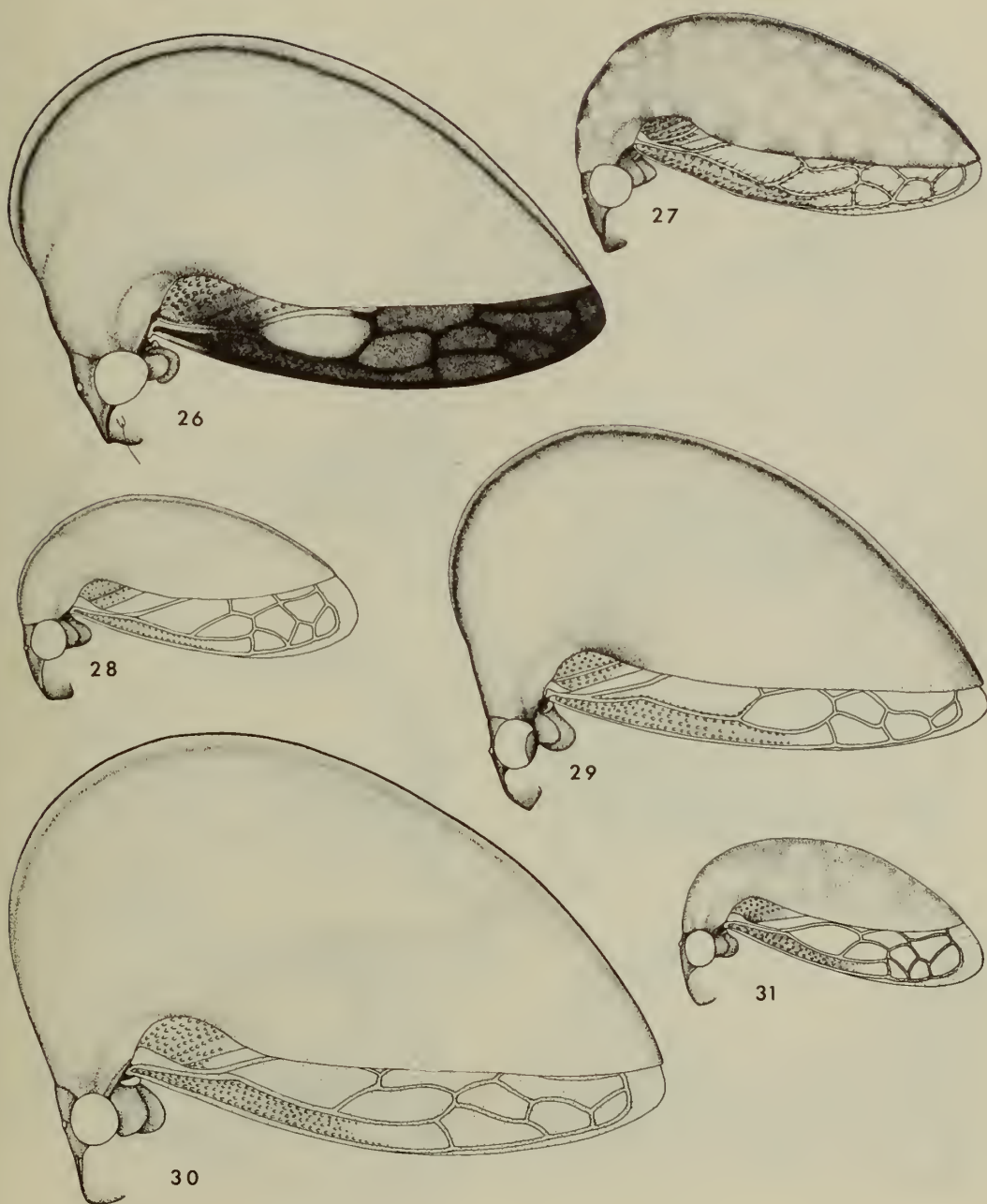
FIGS 1-6. Lateral view of *Amastris* species. 1, *exaltata*; 2, *subangulata*; 3, *flavifolia*; 4, *angulata*; 5, *revelata*; 6, *straminea*.



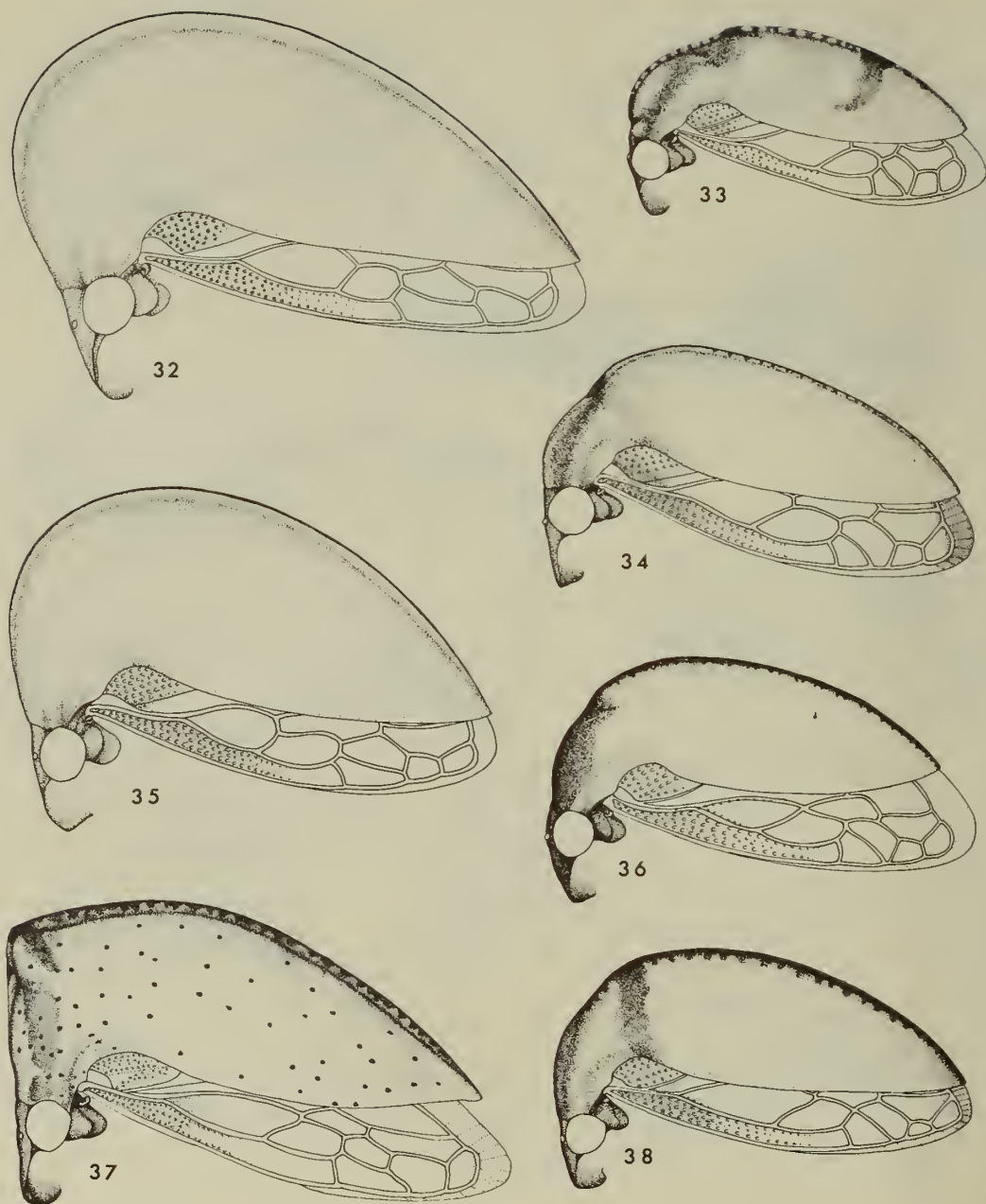
FIGS 7-15. Lateral view of *Amastris* species. 7, *conspicua*; 8, *fallax*; 9, *consanguinea*; 10, *finitima*; 11, *funkhousei*; 12, *inornata*; 13, *arquata*; 14, *vicina*; 15, *affinis*.



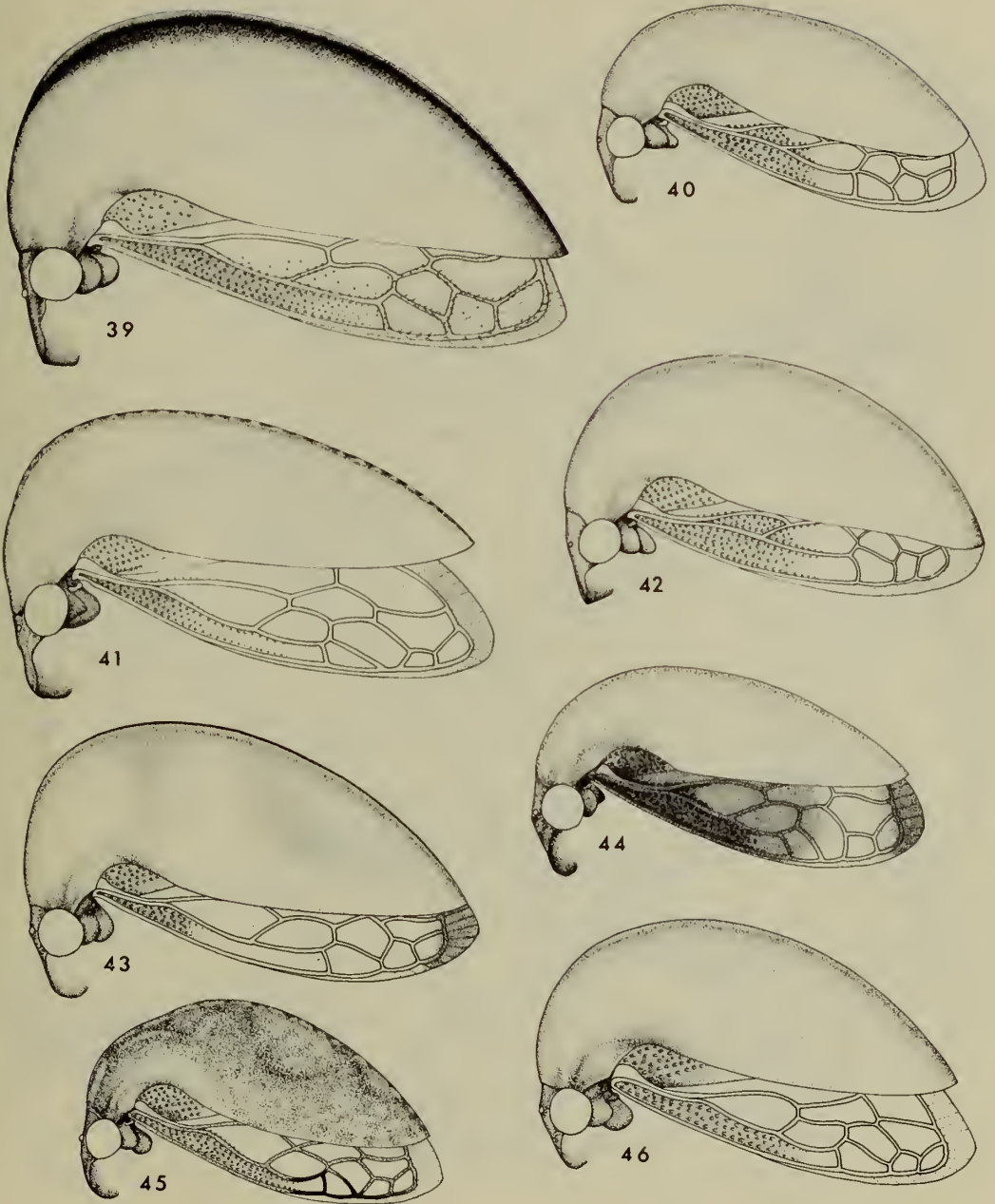
FIGS 16-25. Lateral view of *Amastris* species. 16, *robusta*; 17, *fonsecai*; 18, *panamensis*; 19, *pseudomaculata*; 20, *inclinata*; 21, *unica*; 22, *froeschneri*; 23, *specialis*; 24, *vitallina*; 25, *undulata*.



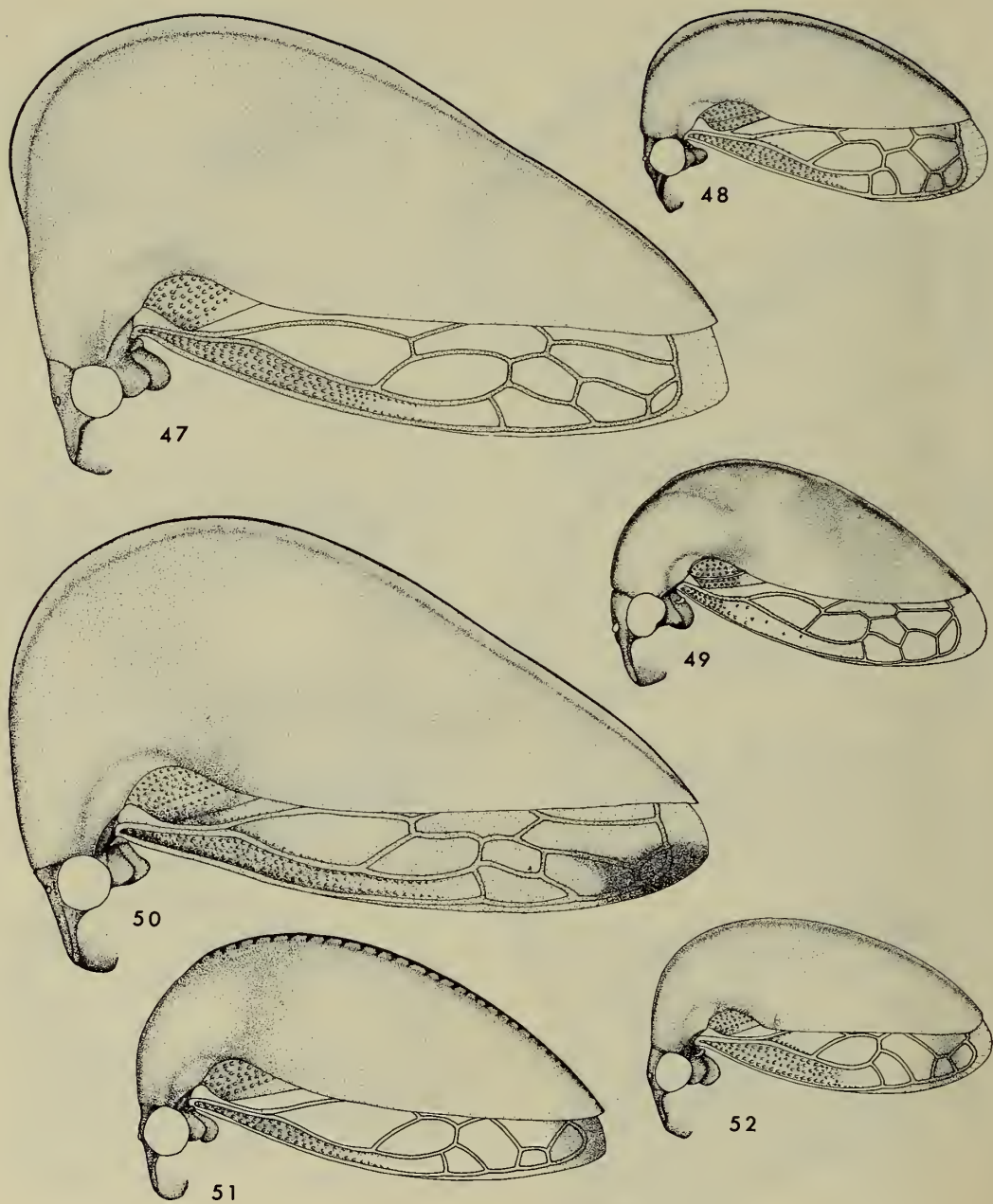
FIGS 26-31. Lateral view of *Amastris* species. 26, *obtegens*; 27, *guttata*; 28, *reclusa*; 29, *vismiae*; 30, *elevata*; 31, *viridisparsa*.



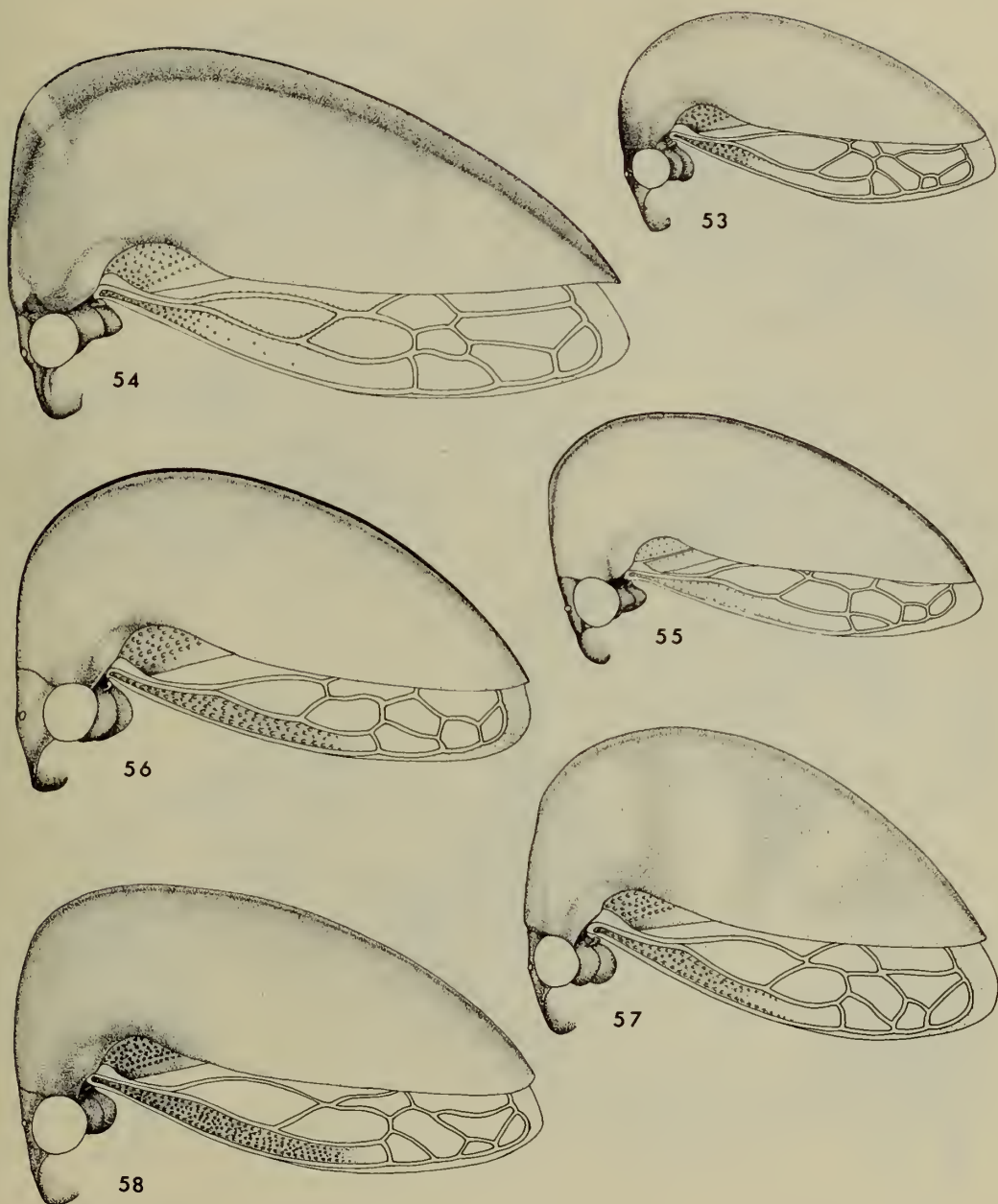
FIGS 32-38. Lateral view of *Amastris* species. 32, *concolor*; 33, *notata*; 34, *sakakibarae*; 35, *ramosa*; 36, *maculata*; 37, *punctata*; 38, *fasciata*.



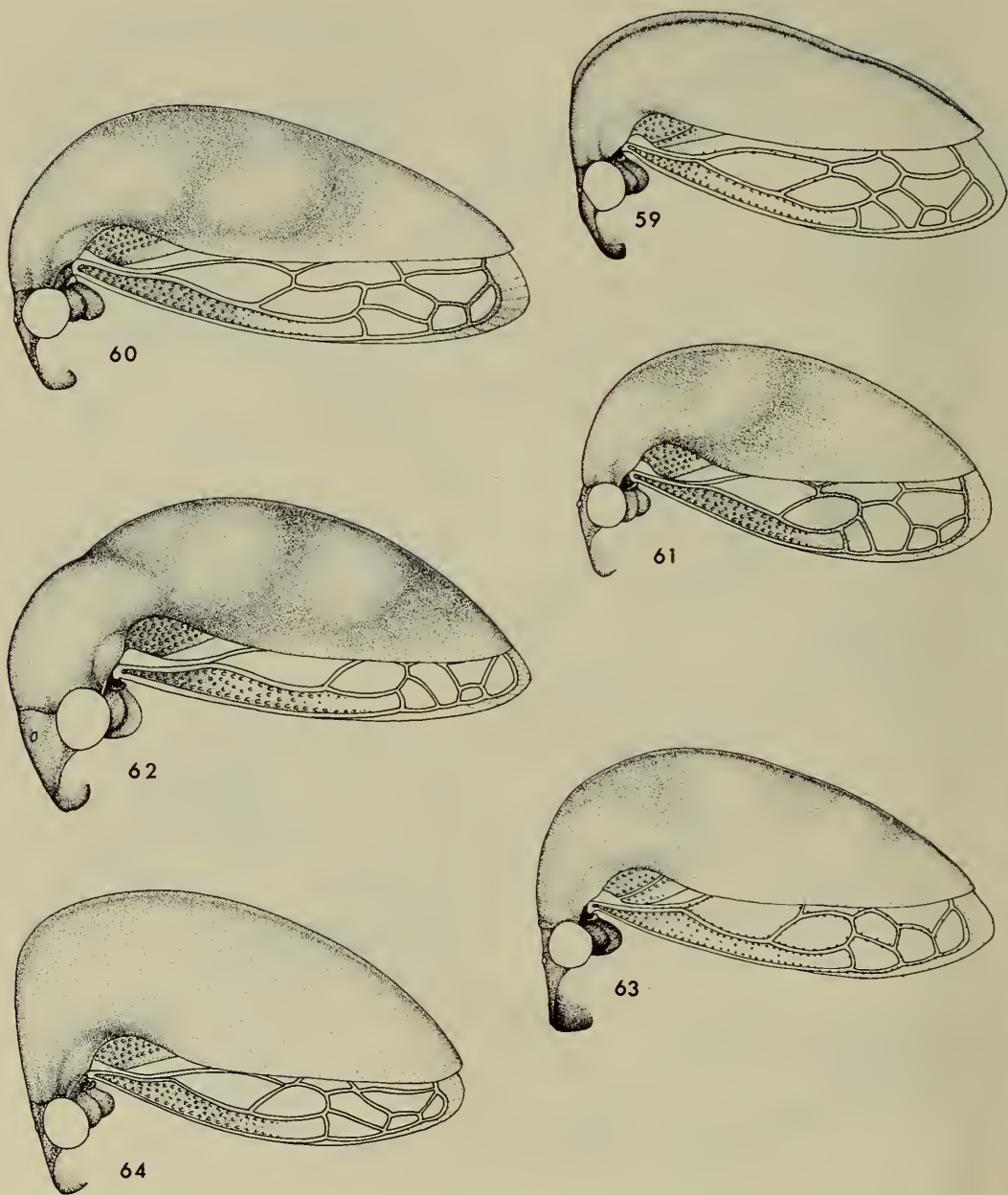
FIGS 39-46. Lateral view of *Amastris* species. 39, *alapigmentata*; 40, *templa*; 41, *flava*; 42, *lycioda*; 43, *dissimilis*; 44, *brunneipennis*; 45, *sabulosa*; 46, *deplumis*.



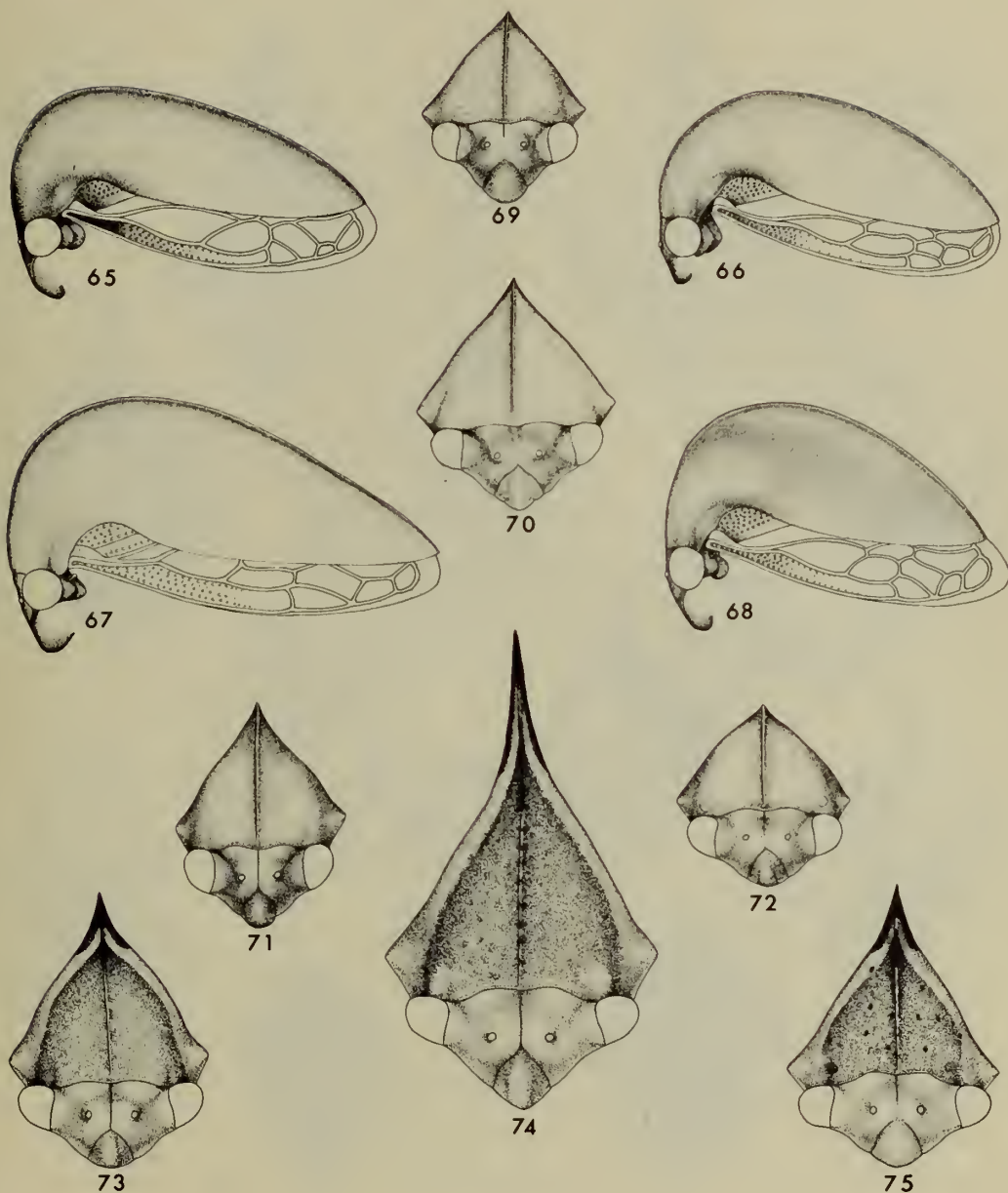
FIGS 47-52. Lateral view of *Amastris* species. 47, *projecta*; 48, *exigua*; 49, *dama*; 50, *peruviana*; 51, *inermis*; 52, *minuta*.



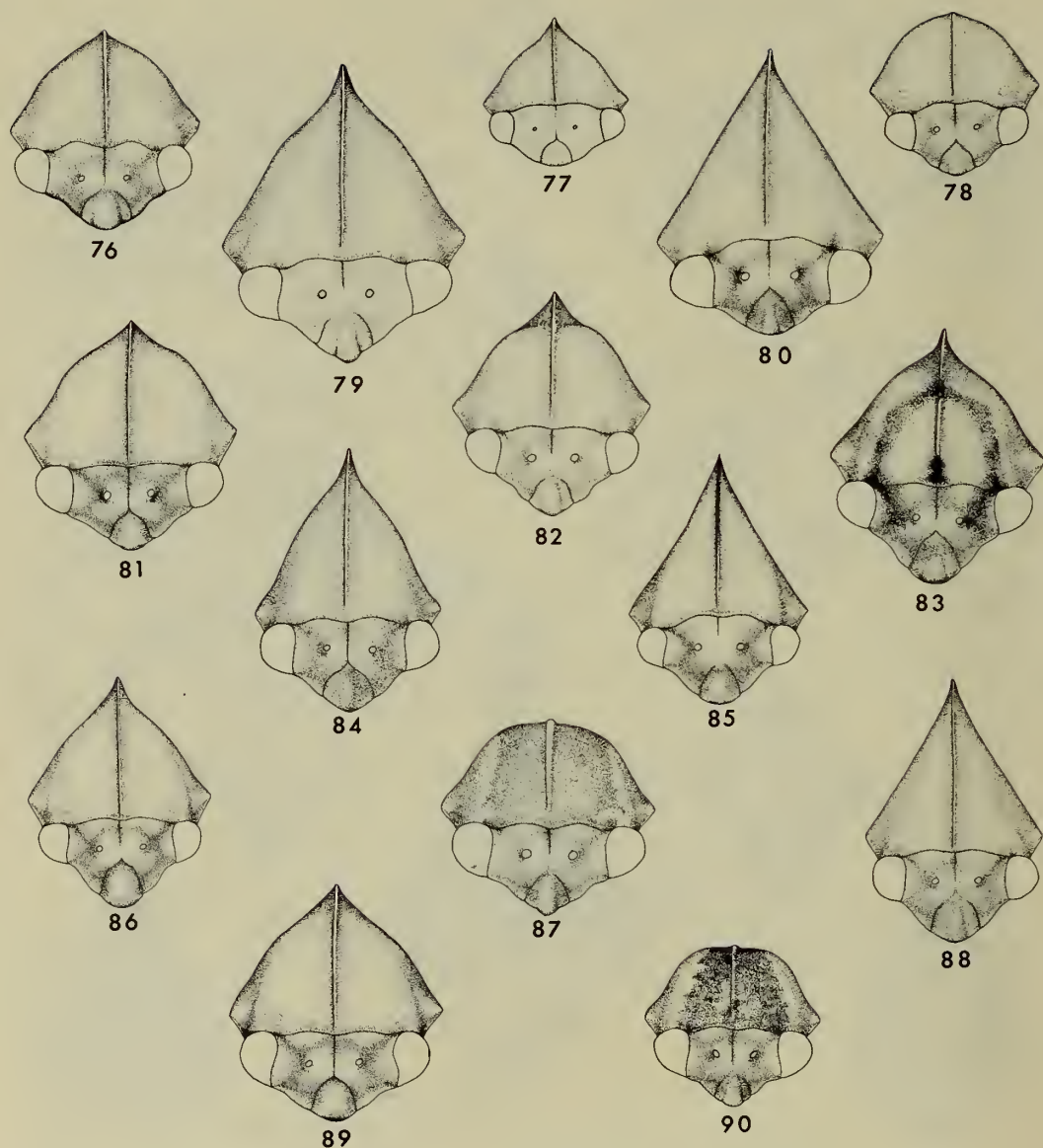
FIGS 53-58. Lateral view of *Amastris* species. 53, *janae*; 54, *pseudoelevata*; 55, *knighti*; 56, *interstincta*; 57, *evexa*; 58, *obscura*.



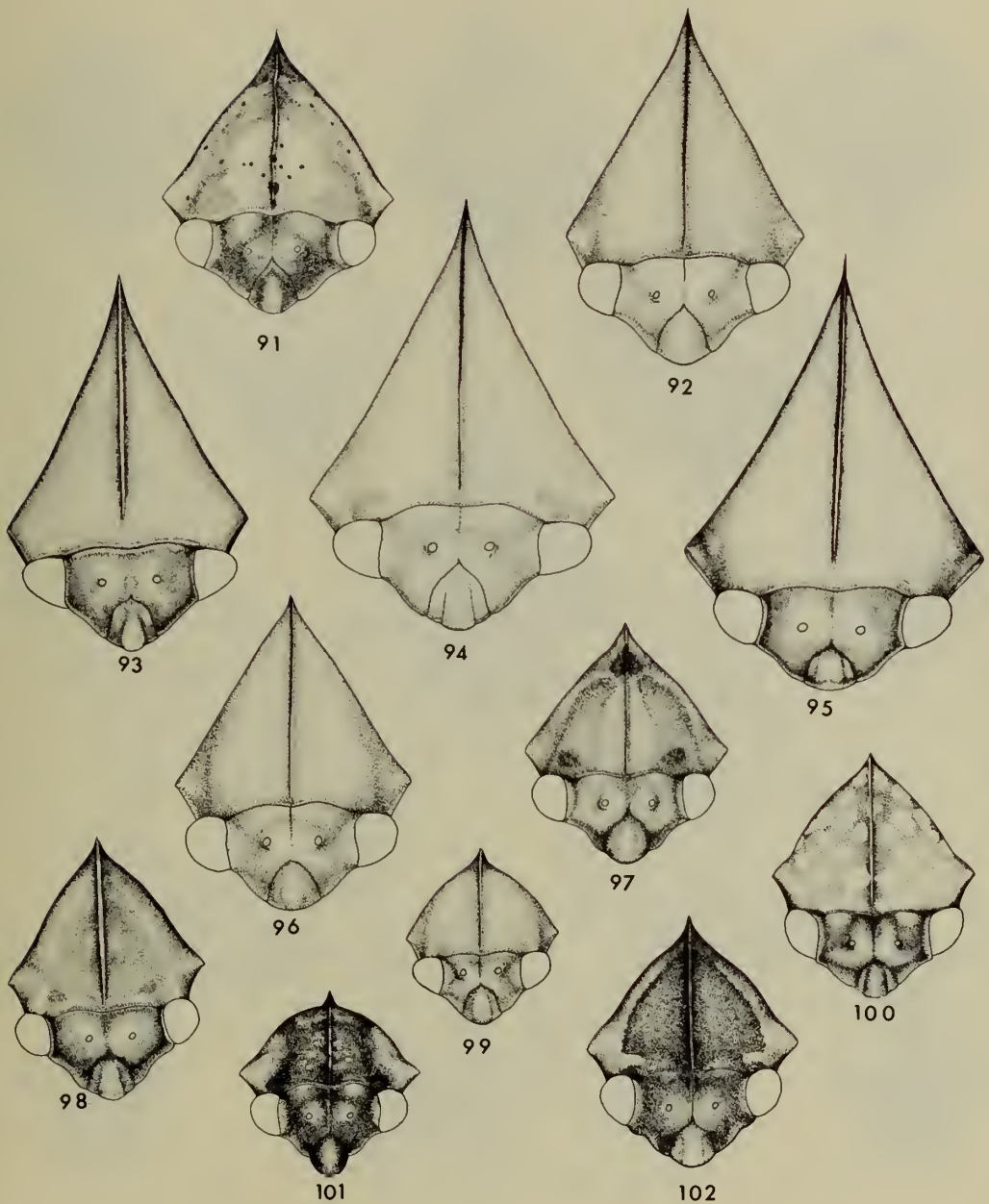
FIGS 59-64. Lateral view of *Amastris* species. 59, *depressa*; 60, *sulphurea*; 61, *discreta*; 62, *simillima*; 63, *gregaria*; 64, *compacta*.



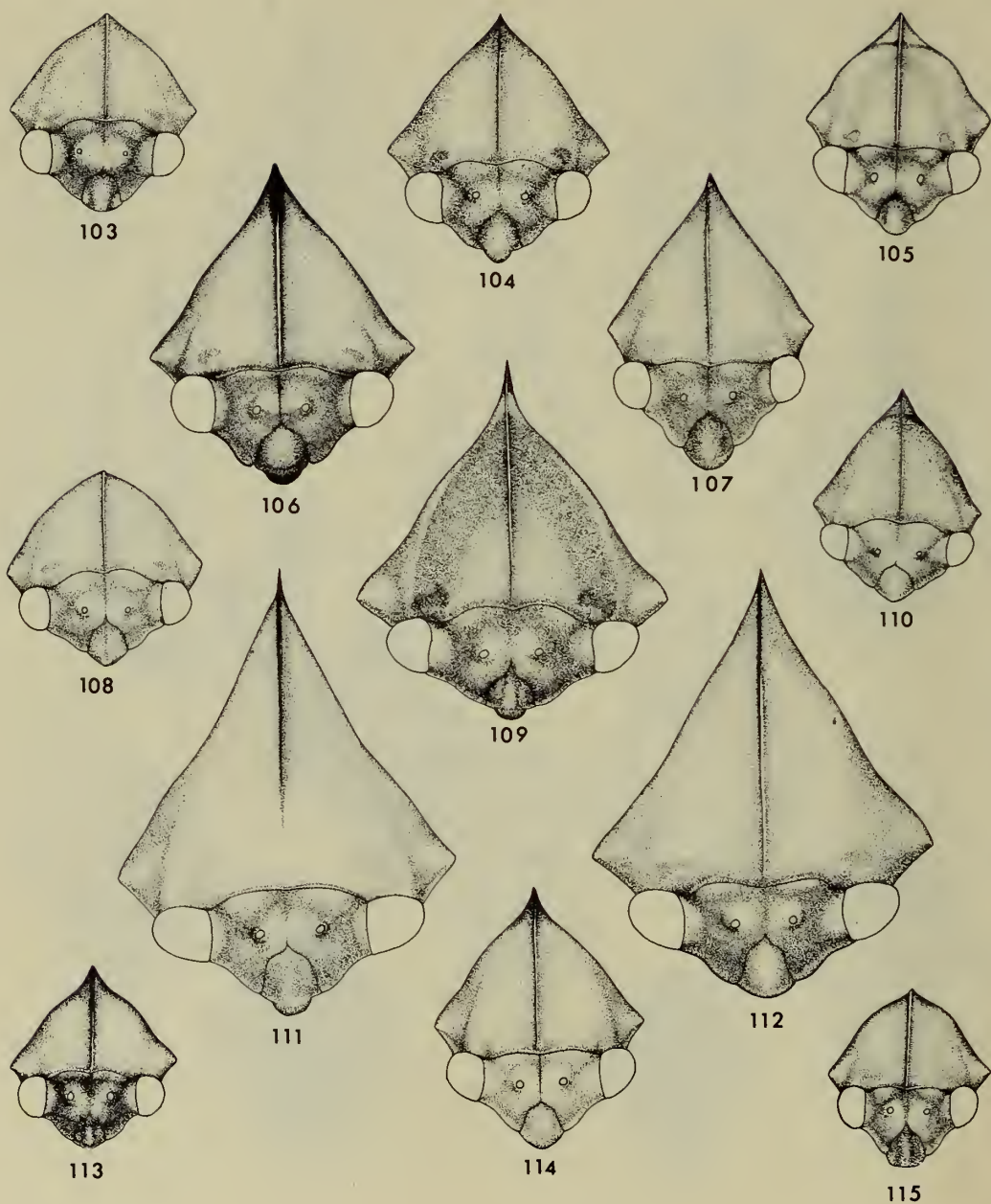
FIGS 65-75. *Amastris* species. 65-68, lateral view of (65) *singularis*, (66) *triviale*, (67) *inconspicua*, (68) *melina*; 69-75, anterior views of (69) *singularis*, (70) *inconspicua*, (71) *melina*, (72) *triviale*, (73) *subangulata*, (74) *exaltata*, (75) *angulata*.



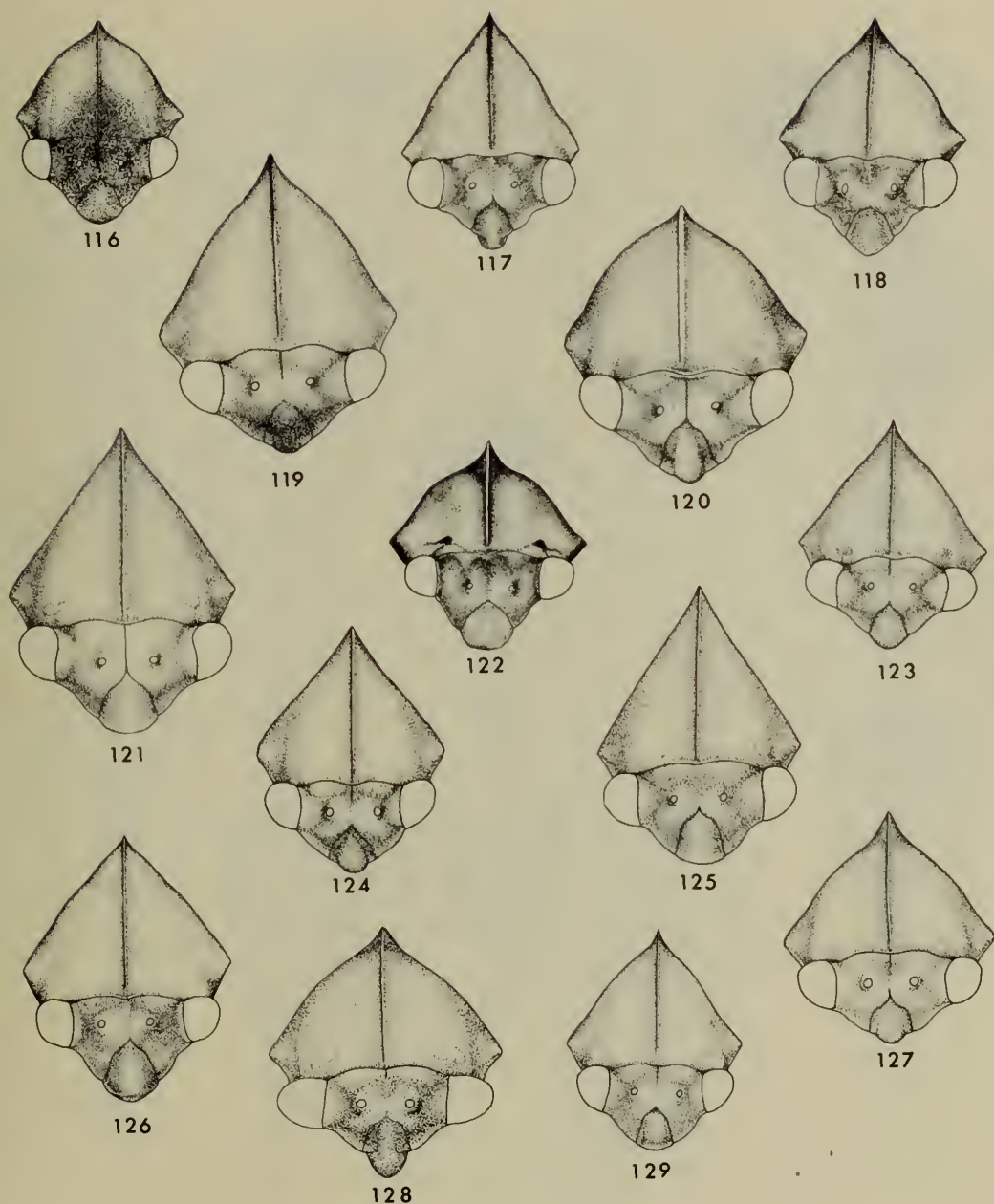
FIGS 76-90. Anterior views of *Amastris* species. 76, *fonsecai*; 77, *panamensis*; 78, *froeschneri*; 79, *robusta*; 80, *flavifolia*; 81, *affinis*; 82, *funkhouserii*; 83, *revelata*; 84, *straminea*; 85, *vitallina*; 86, *inornata*; 87, *specialis*; 88, *vicina*; 89, *fallax*; 90, *undulata*.



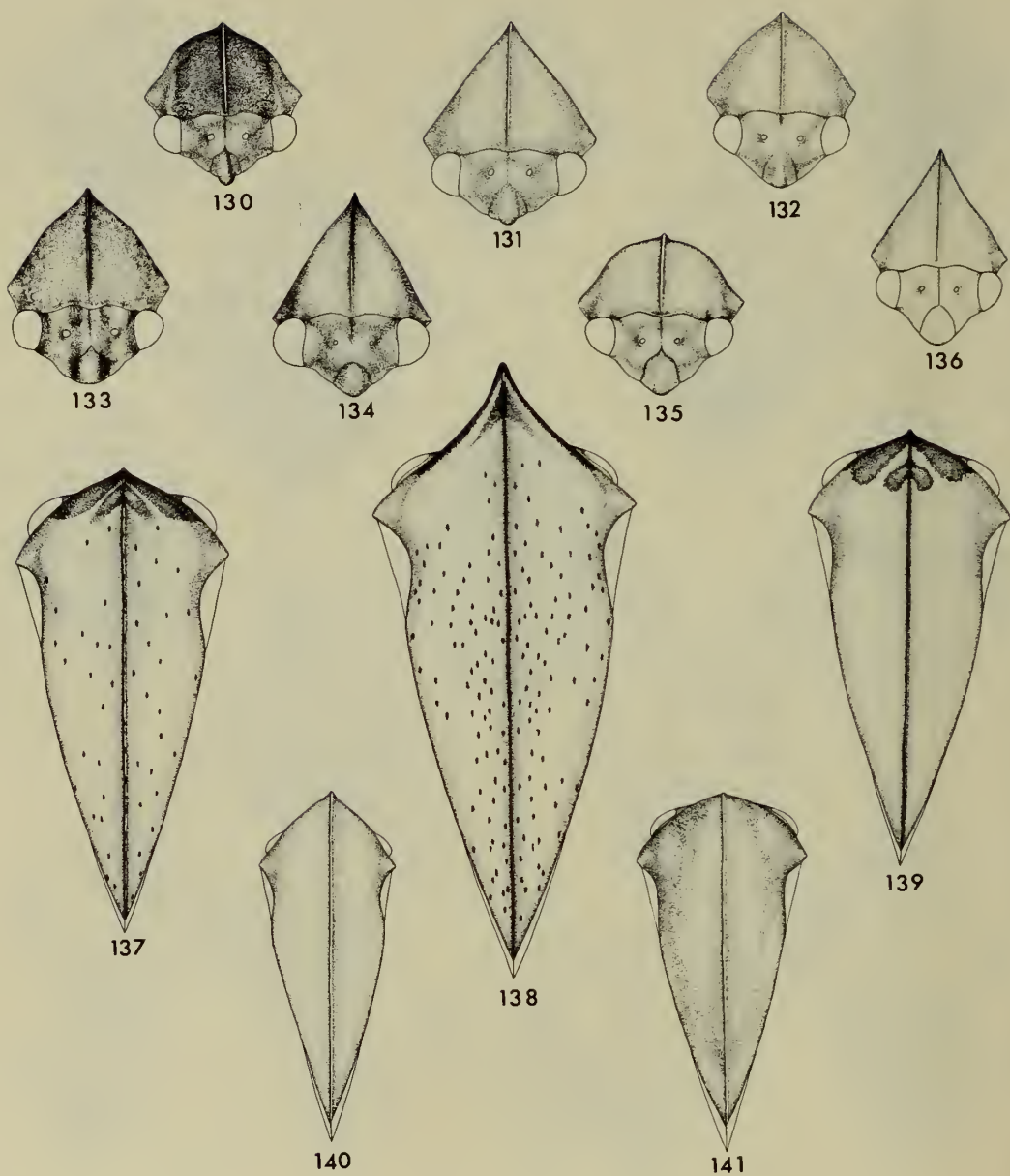
FIGS 91-102. Anterior view of *Amastris* species. 91, *punctata*; 92, *concolor*; 93, *vismiae*; 94, *elevata*; 95, *obtegens*; 96, *ramosa*; 97, *sakakibarai*; 98, *fasciata*; 99, *viridisparva*; 100, *guttata*; 101, *notata*; 102, *maculata*.



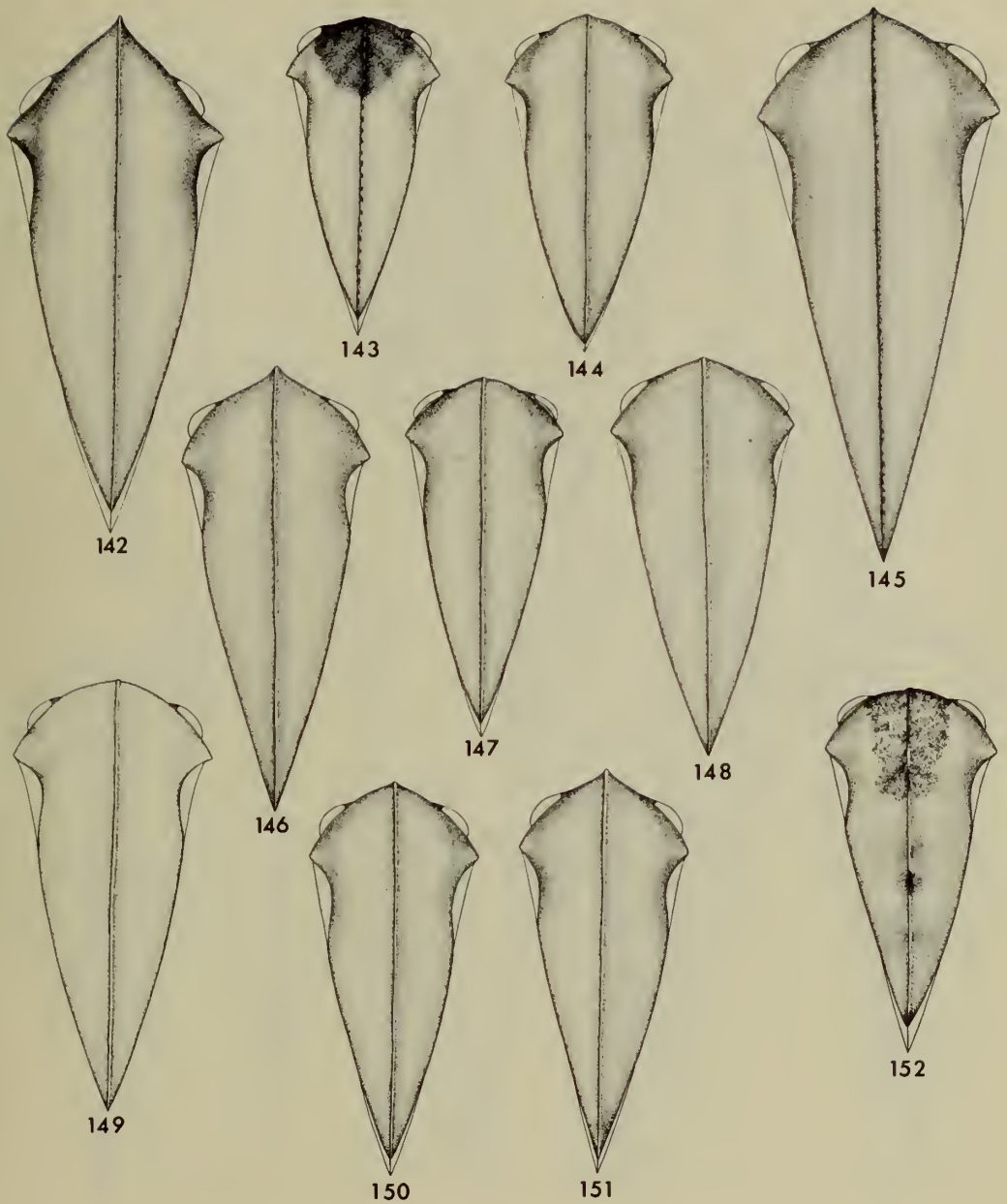
FIGS 103-115. Anterior view of *Amastris* species. 103, *brunneipennis*; 104, *dissimilis*; 105, *sabulosa*; 106, *alapigmentata*; 107, *flava*; 108, *templa*; 109, *pseudoelevata*; 110, *lycioda*; 111, *projecta*; 112, *peruviana*; 113, *exigua*; 114, *inermis*; 115, *reclusa*.



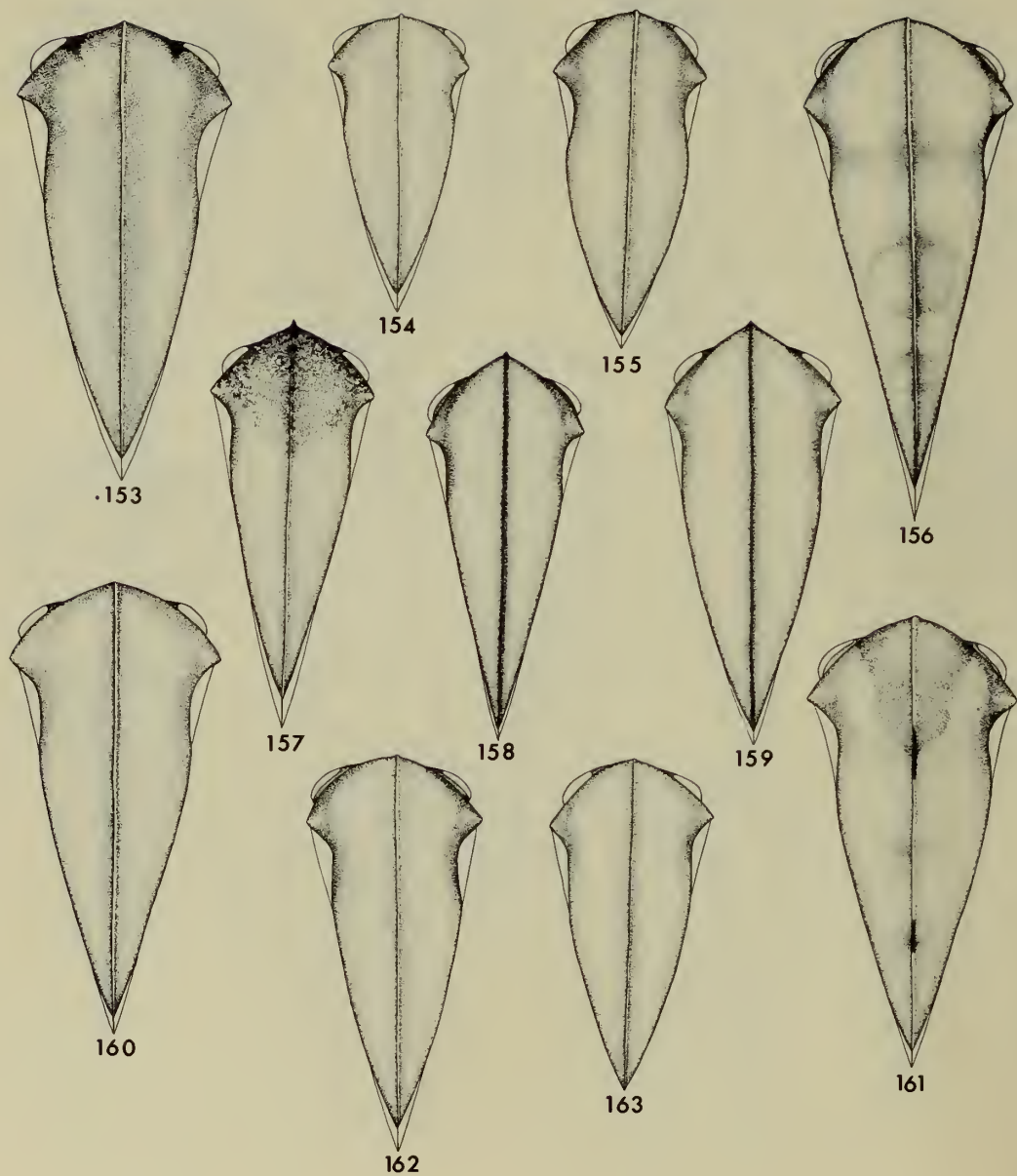
FIGS 116–129. Anterior view of *Amastris* species. 116, *janae*; 117, *knighti*; 118, *depressa*; 119, *interstincta*; 120, *simillima*; 121, *obscura*; 122, *dama*; 123, *evexa*; 124, *discreta*; 125, *compacta*; 126, *gregaria*; 127, *deplumis*; 128, *sulphurea*; 129, *minuta*.



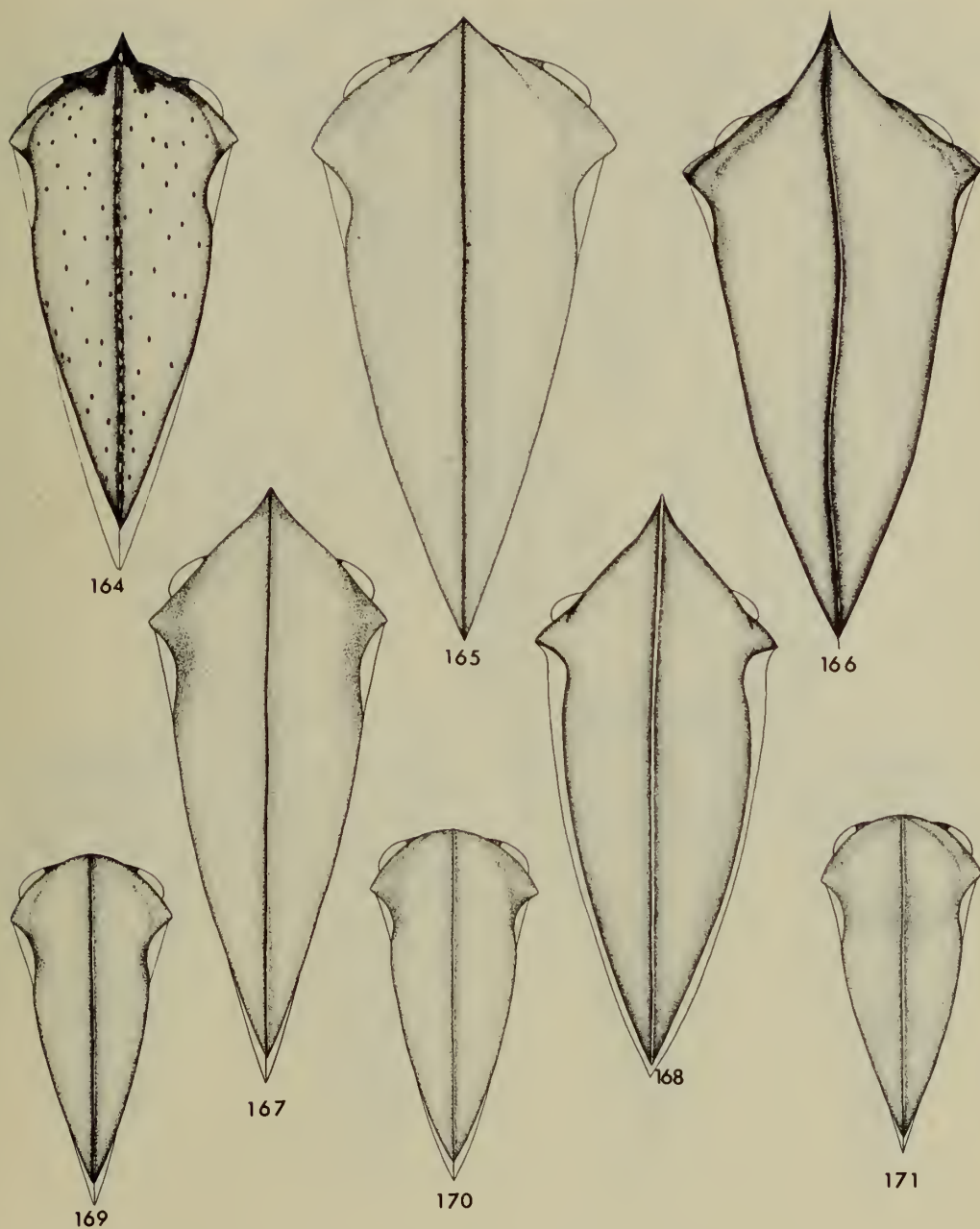
FIGS 130-141. *Amastris* species. 130-136, anterior view of (130) *pseudomaculata*, (131) *finitima*, (132) *arquata*, (133) *conspicua*, (134) *unica*, (135) *consanguinea*, (136) *inclinata*; 137-141, dorsal view of (137) *angulata*, (138) *exaltata*, (139) *subangulata*, (140) *inclinata*, (141) *melina*.



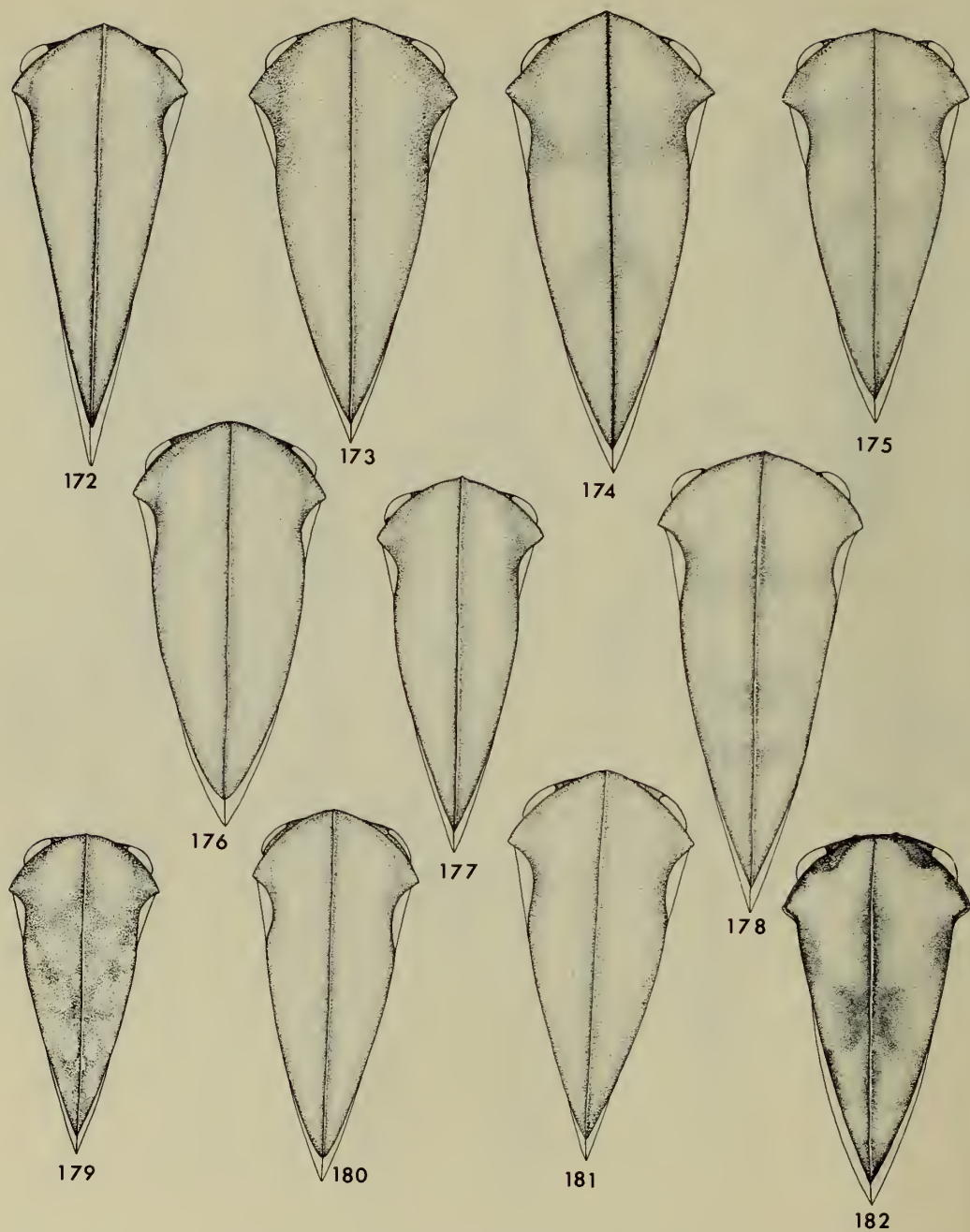
FIGS 142-152. Dorsal view of *Amastris* species. 142, *flavifolia*; 143, *pseudomaculata*; 144, *triviale*; 145, *robusta*; 146, *straminea*; 147, *singularis*; 148, *fonsecai*; 149, *inconspicua*; 150, *finitima*; 151, *vicina*; 152, *undulata*.



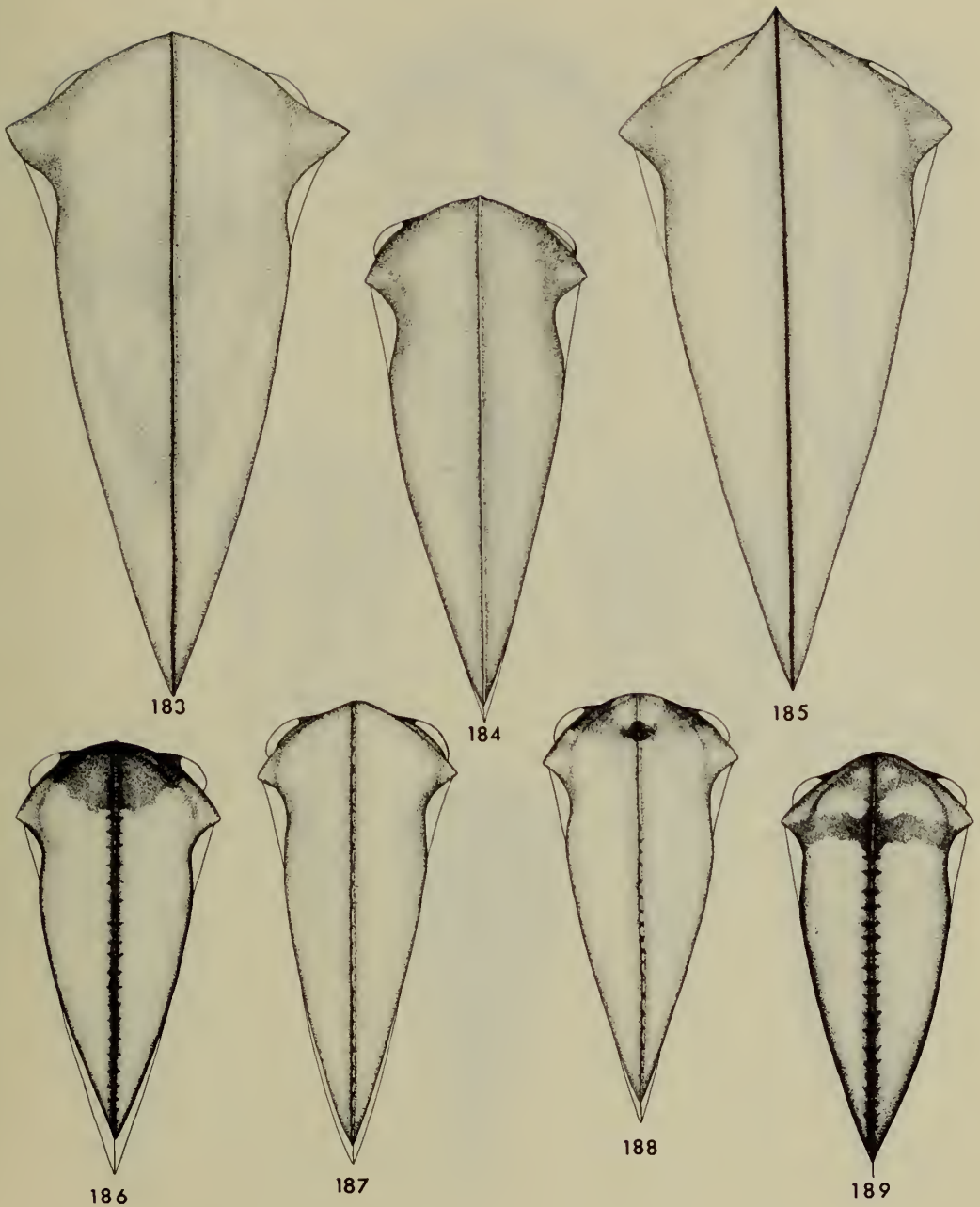
FIGS 153-163. Dorsal view of *Amastris* species. 153, *revelata*; 154, *panamensis*; 155, *arquata*; 156, *fallax*; 157, *conspicua*; 158, *unica*; 159, *vitallina*; 160, *affinis*; 161, *specialis*; 162, *inornata*; 163, *froeschneri*.



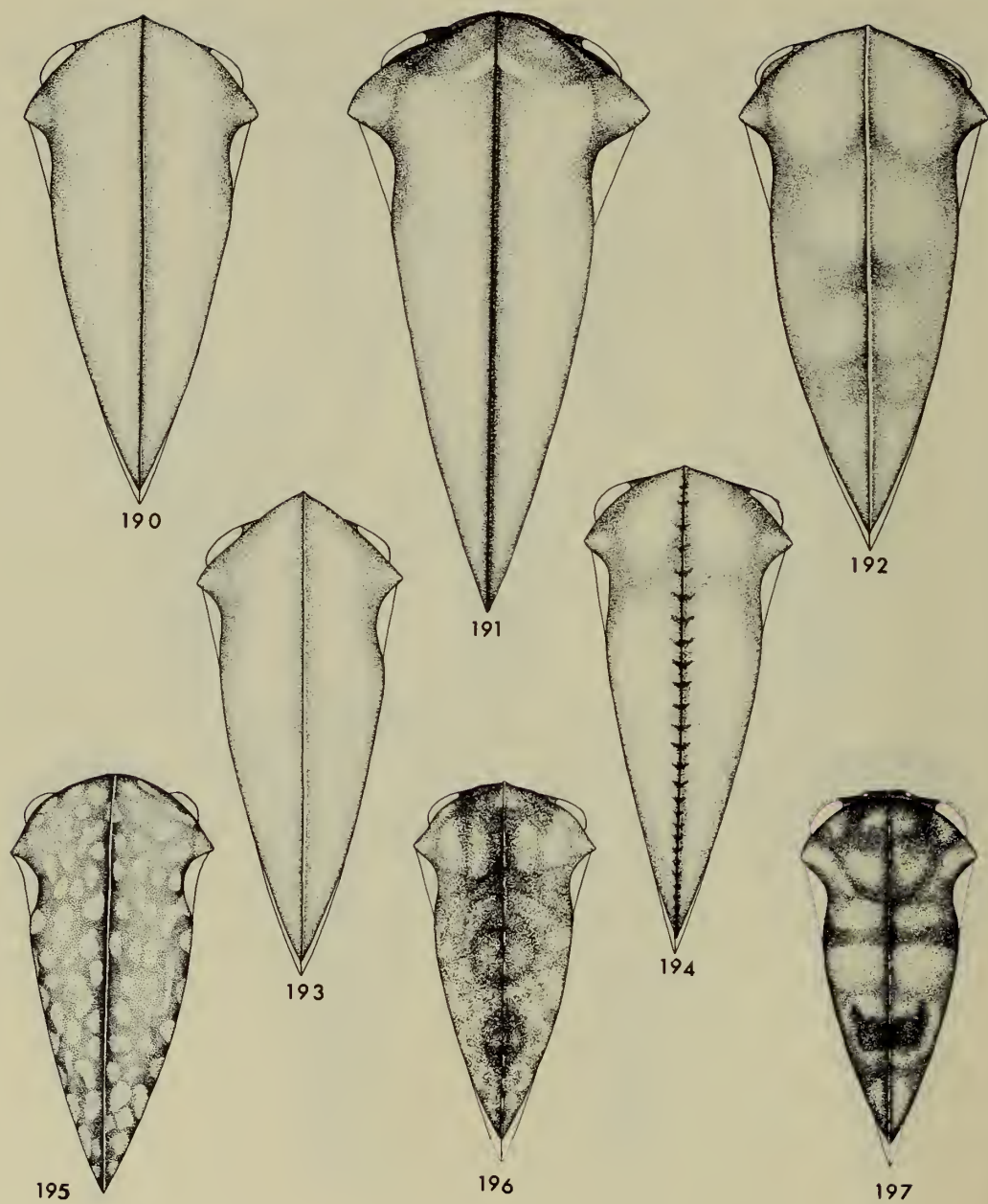
FIGS 164-171. Dorsal view of *Amastris* species. 164, *punctata*; 165, *elevata*; 166, *oblegens*; 167, *concolor*; 168, *vismiae*; 169, *exigua*; 170, *minuta*; 171, *reclusa*.



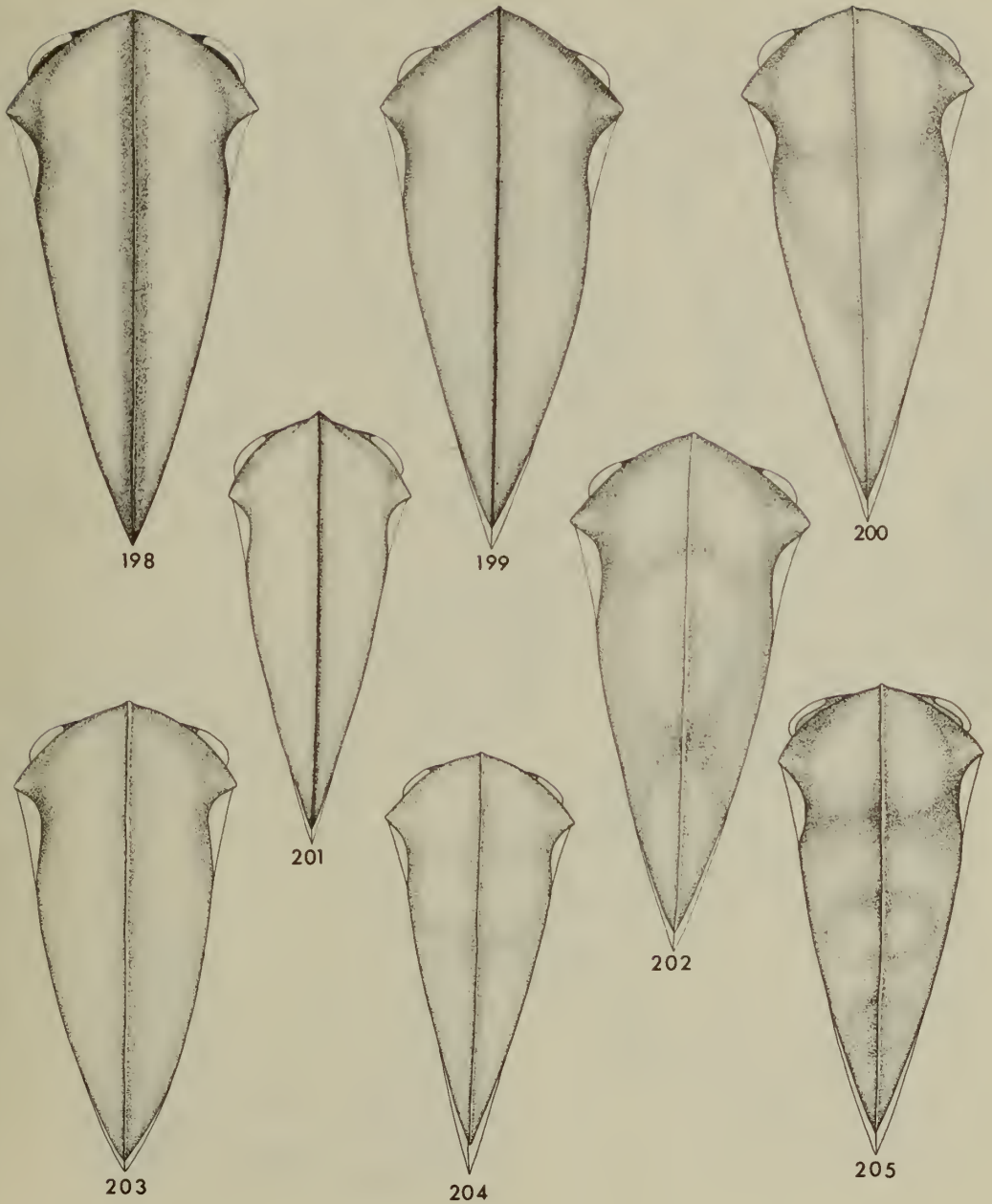
FIGS 172-182. Dorsal view of *Amastris* species. 172, *depressa*; 173, *deplumis*; 174, *dissimilis*; 175, *evexa*; 176, *templa*; 177, *janae*; 178, *gregaria*; 179, *viridisparsa*; 180, *lycioda*; 181, *brunneipennis*; 182, *dama*.



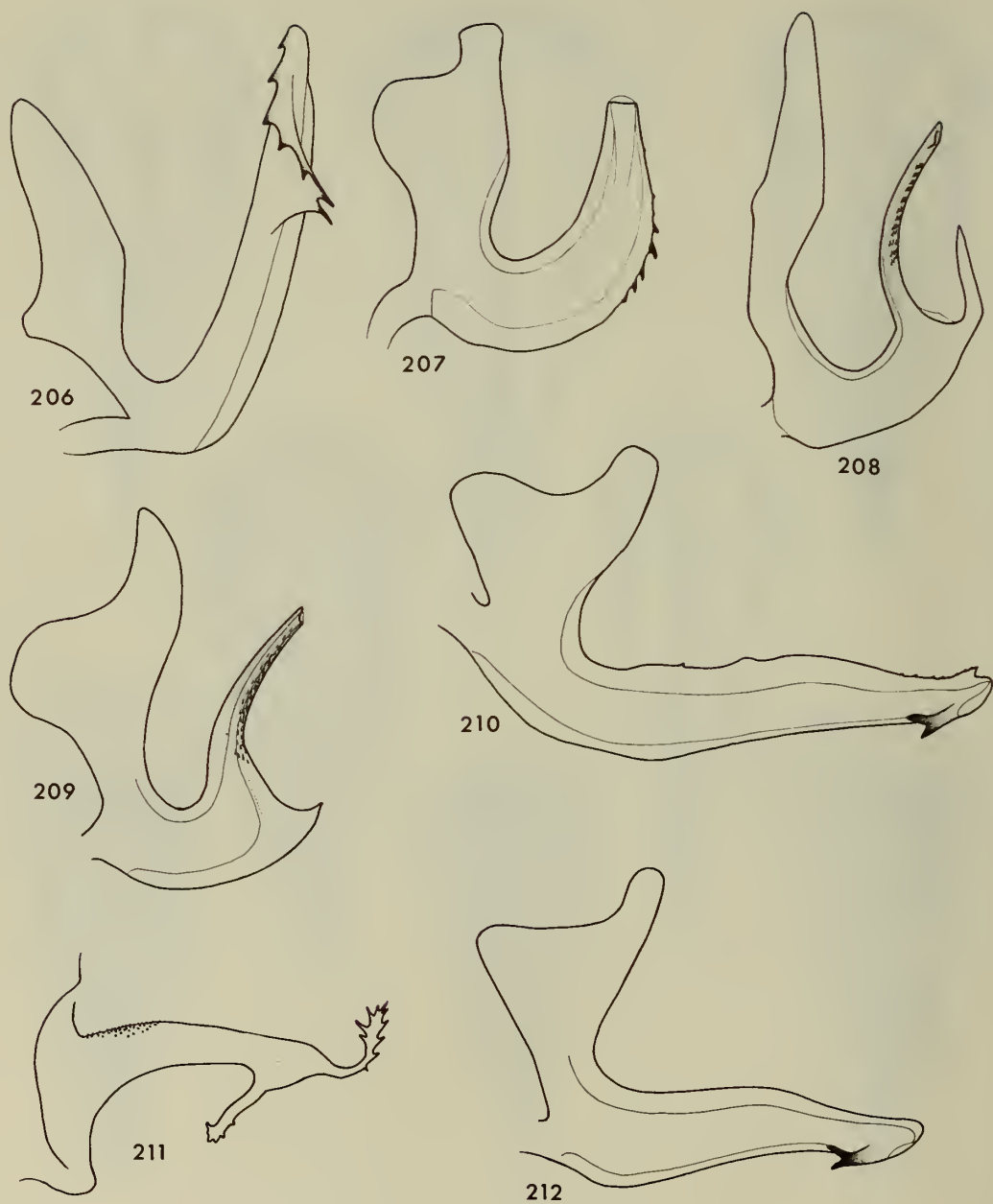
FIGS 183–189. Dorsal view of *Amastris* species. 183, *peruviana*; 184, *obscura*; 185, *projecta*; 186, *maculata*; 187, *flava*; 188, *sakakibarai*; 189, *fasciata*.



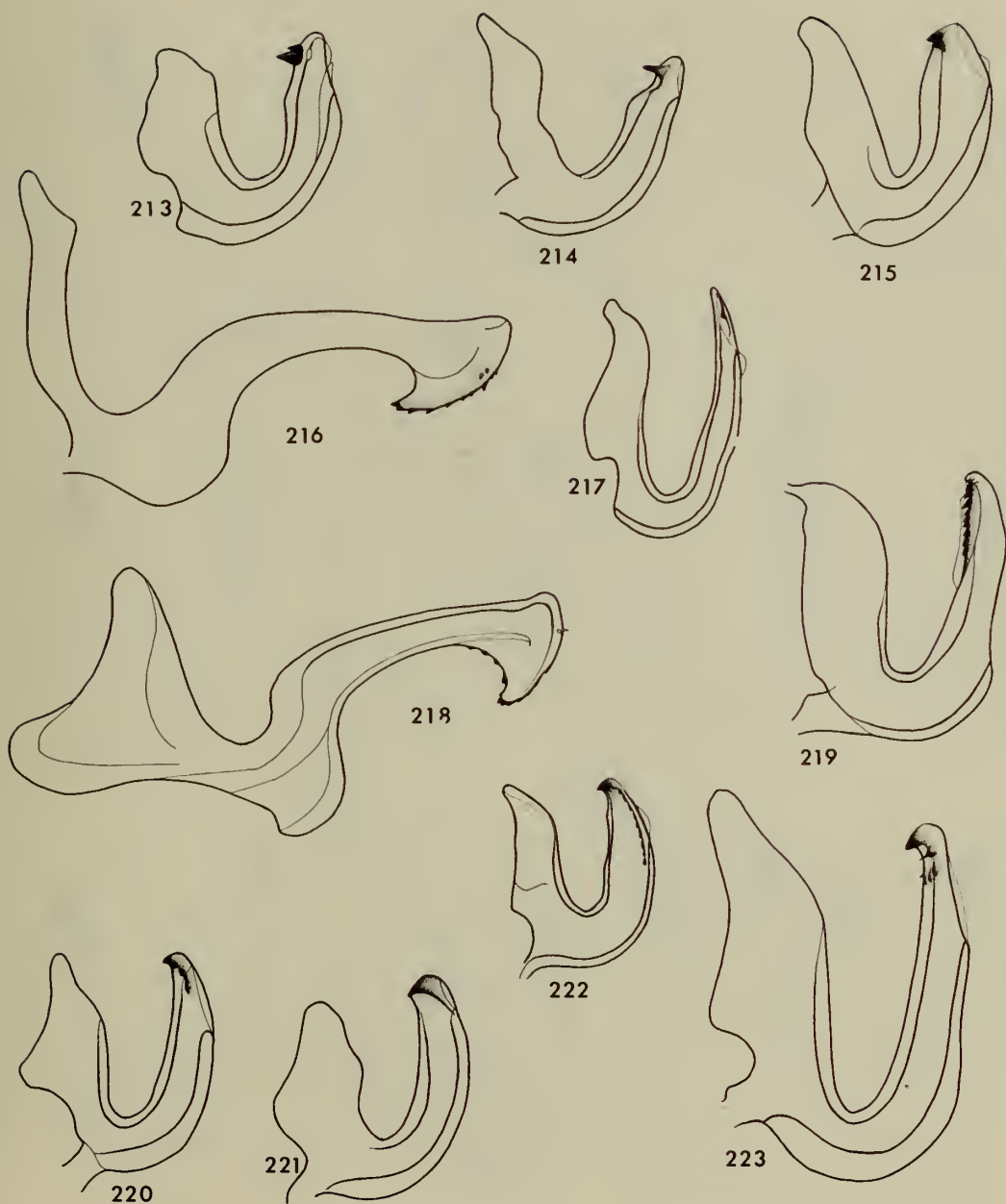
FIGS 190-197. Dorsal view of *Amastris* species. 190, *ramosa*; 191, *pseudoelevata*; 192, *simillima*; 193, *compacta*; 194, *inermis*; 195, *guttata*; 196, *sabulosa*; 197, *notata*.



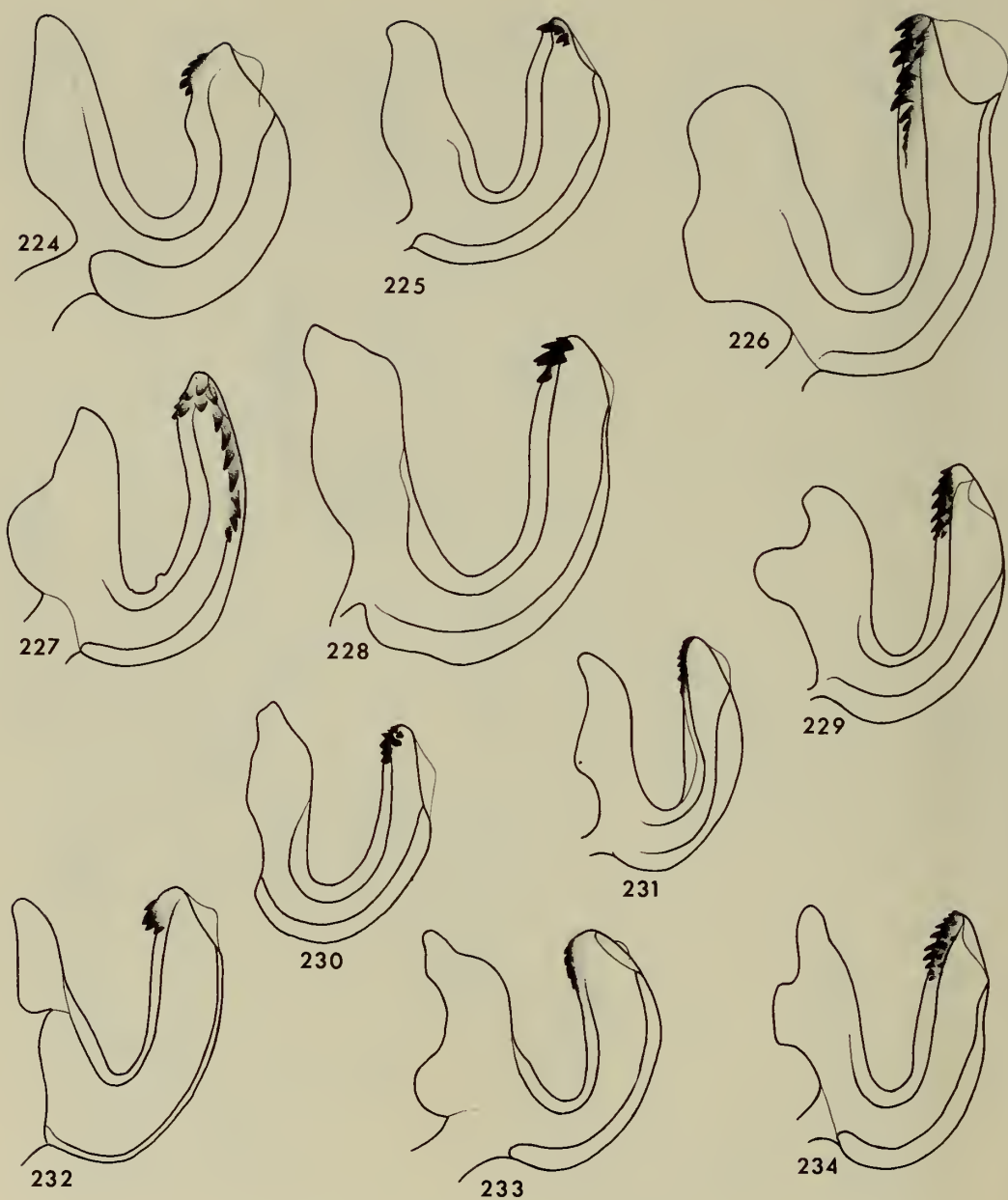
FIGS 198–205. Dorsal view of *Amastris* species. 198, *alapigmentata*; 199, *sulphurea*; 200, *interstincta*; 201, *knighti*; 202, *funkhouserii*; 203, *fonsecai*; 204, *discreta*; 205, *con-sanguinea*.



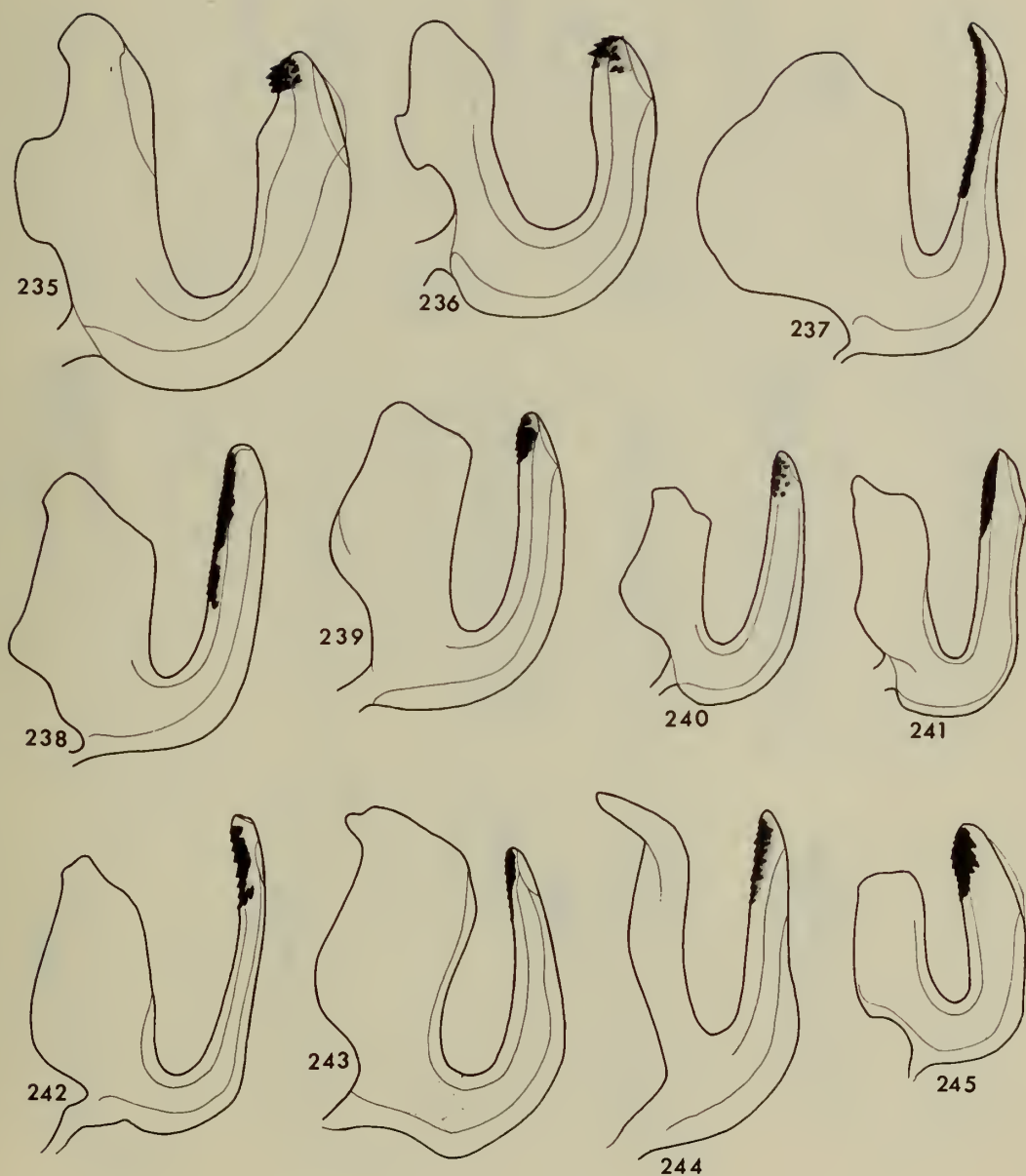
FIGS 206-212. Left lateral view of aedeagus of *Amastris* species. 206, *dissimilis*; 207, *obtegens*; 208, *concolor*; 209, *vitallina*; 210, *ramosa*; 211, *dama*; 212, *interstincta*.



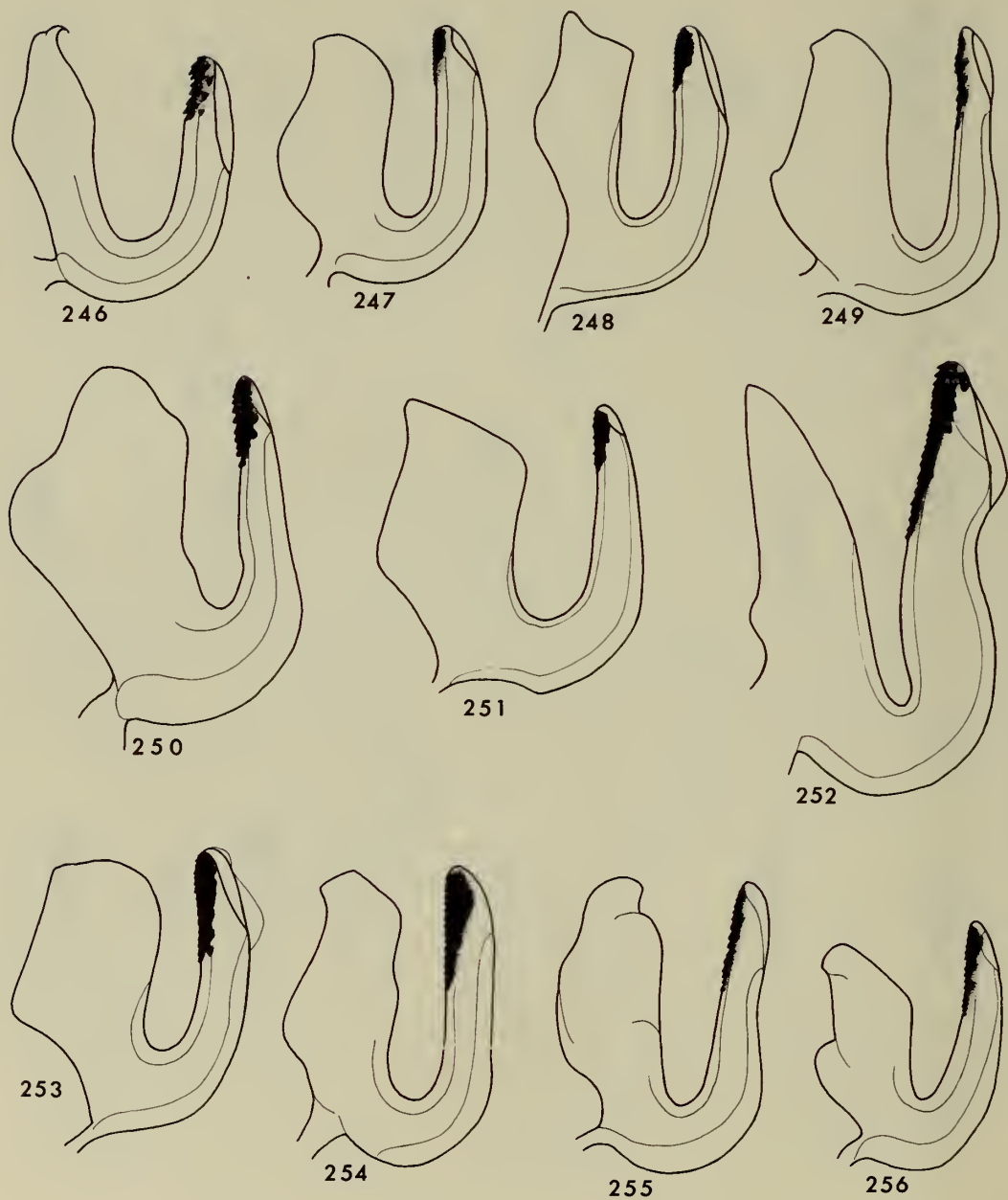
FIGS 213–223. Left lateral view of aedeagus of *Amastris* species. 213, *knighti*; 214, *unica*; 215, *deplumis*; 216, *flavifolia*; 217, *minuta*; 218, *vismiae*; 219, *fasciata*; 220, *brunneipennis*; 221, *inclinata*; 222, *exigua*; 223, *lycioda*.



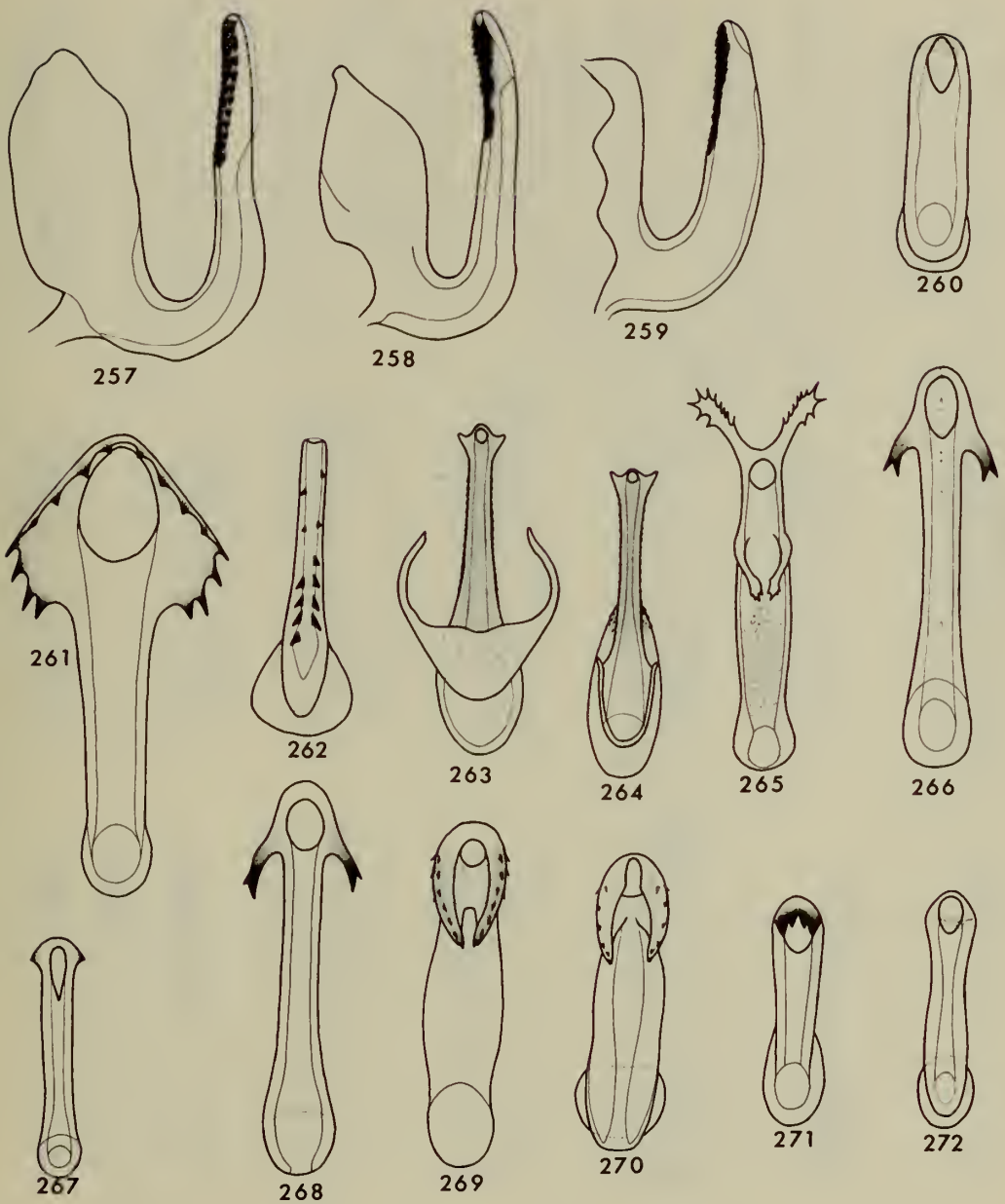
FIGS 224-234. Left lateral view of aedeagus of *Amastris* species. 224, *exaltata*; 225, *subangulata*; 226, *robusta*; 227, *fonsecai*; 228, *alapigmentata*; 229, *vicina*; 230, *triviale*; 231, *froeschneri*; 232, *punctata*; 233, *angulata*; 234, *finitima*.



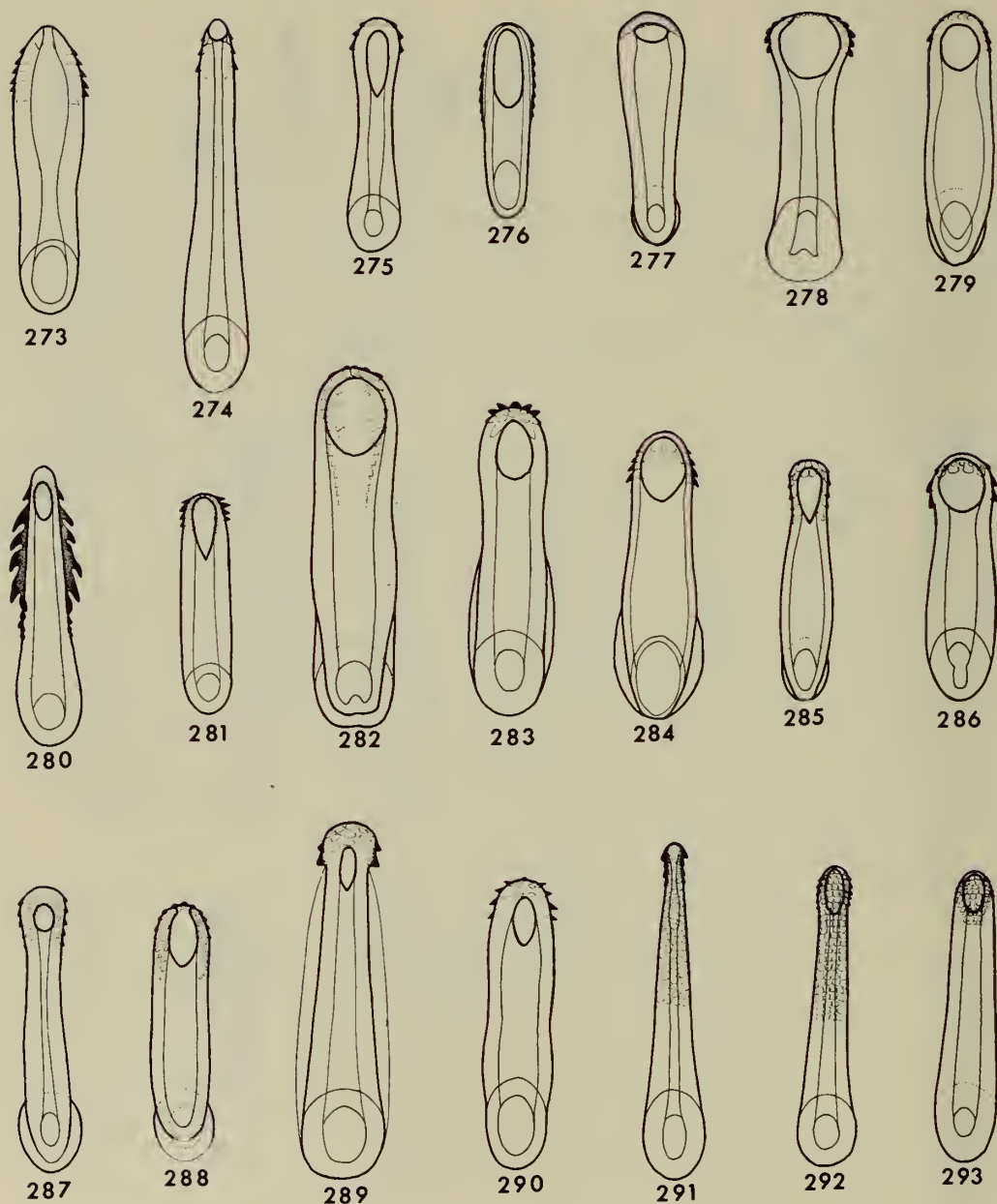
FIGS 235–245. Left lateral view of aedeagus of *Amastris* species. 235, *pseudoelevata*; 236, *inconspicua*; 237, *obscura*; 238, *singularis*; 239, *undulata*; 240, *viridisparsa*; 241, *reclusa*; 242, *flava*; 243, *evexa*; 244, *affinis*; 245, *guttata*.



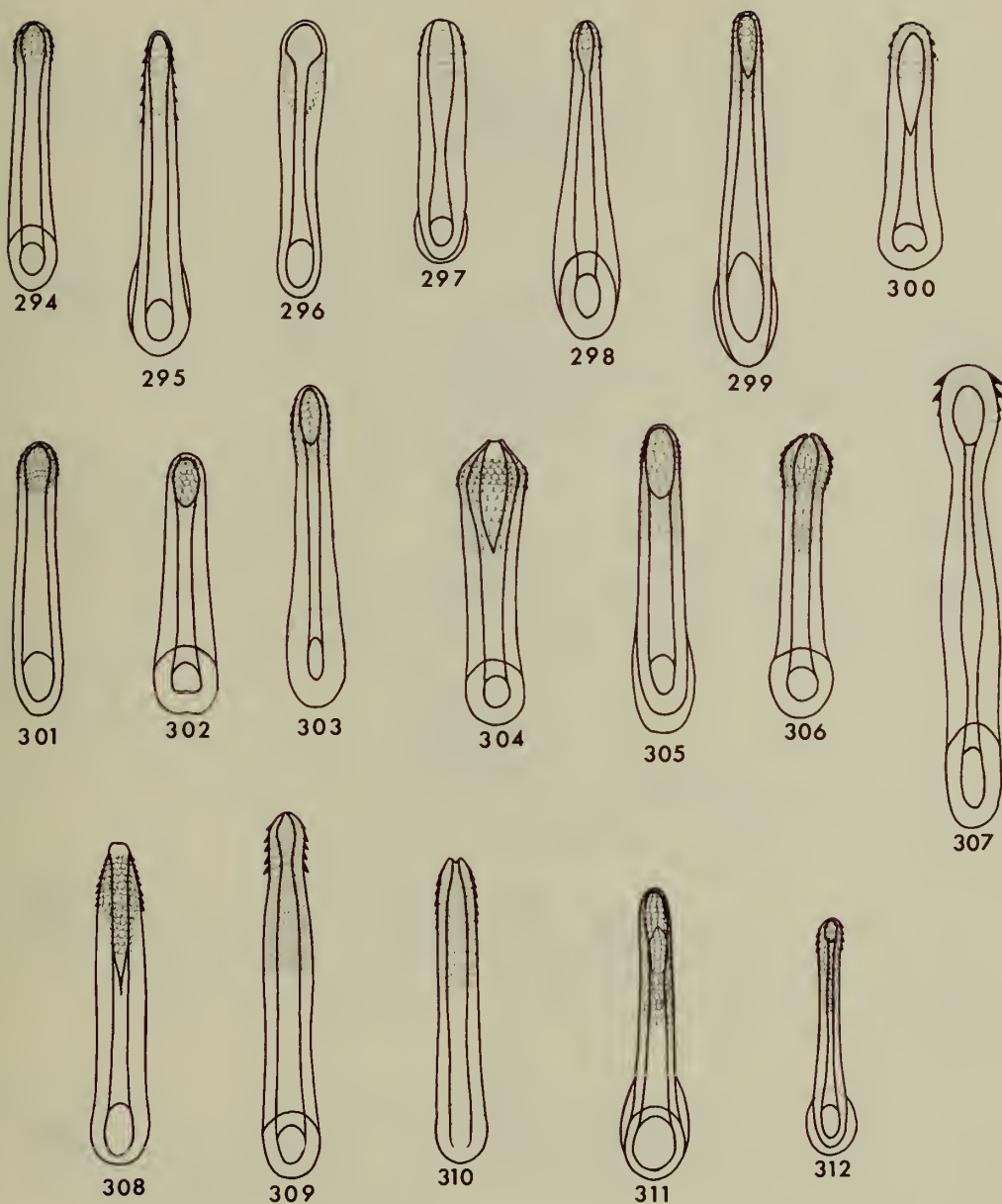
FIGS 246-256. Left lateral view of aedeagus of *Amastris* species. 246, *conspicua*; 247, *pseudomaculata*; 248, *notata*; 249, *gregaria*; 250, *specialis*; 251, *melina*; 252, *templa*; 253, *funkhouserii*; 254, *inornata*; 255, *maculata*; 256, *janae*.



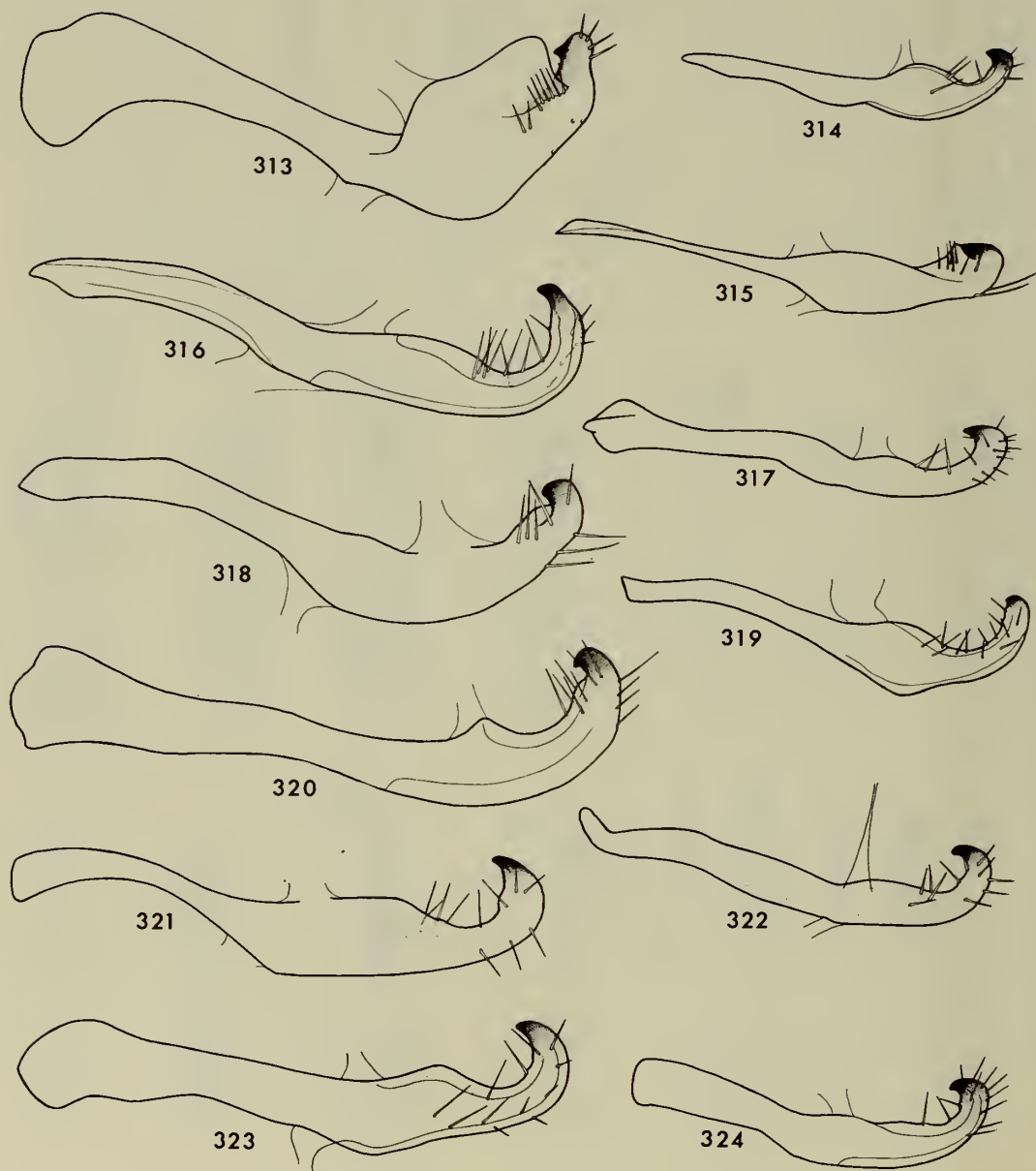
FIGS 257-272. *Amastris* species. 257-259, left lateral view of aedeagus of (257) *inermis*, (258) *sakakibarai*, (259) *depressa*; 260-272, posterior view of aedeagus of (260) *deplumis*, (261) *dissimilis*, (262) *obtegens*, (263) *concolor*, (264) *vitallina*, (265) *dama*, (266) *ramosa*, (267) *minuta*, (268) *interstincta*, (269) *flavifolia*, (270) *vismia*, (271) *knighti*, (272) *unica*.



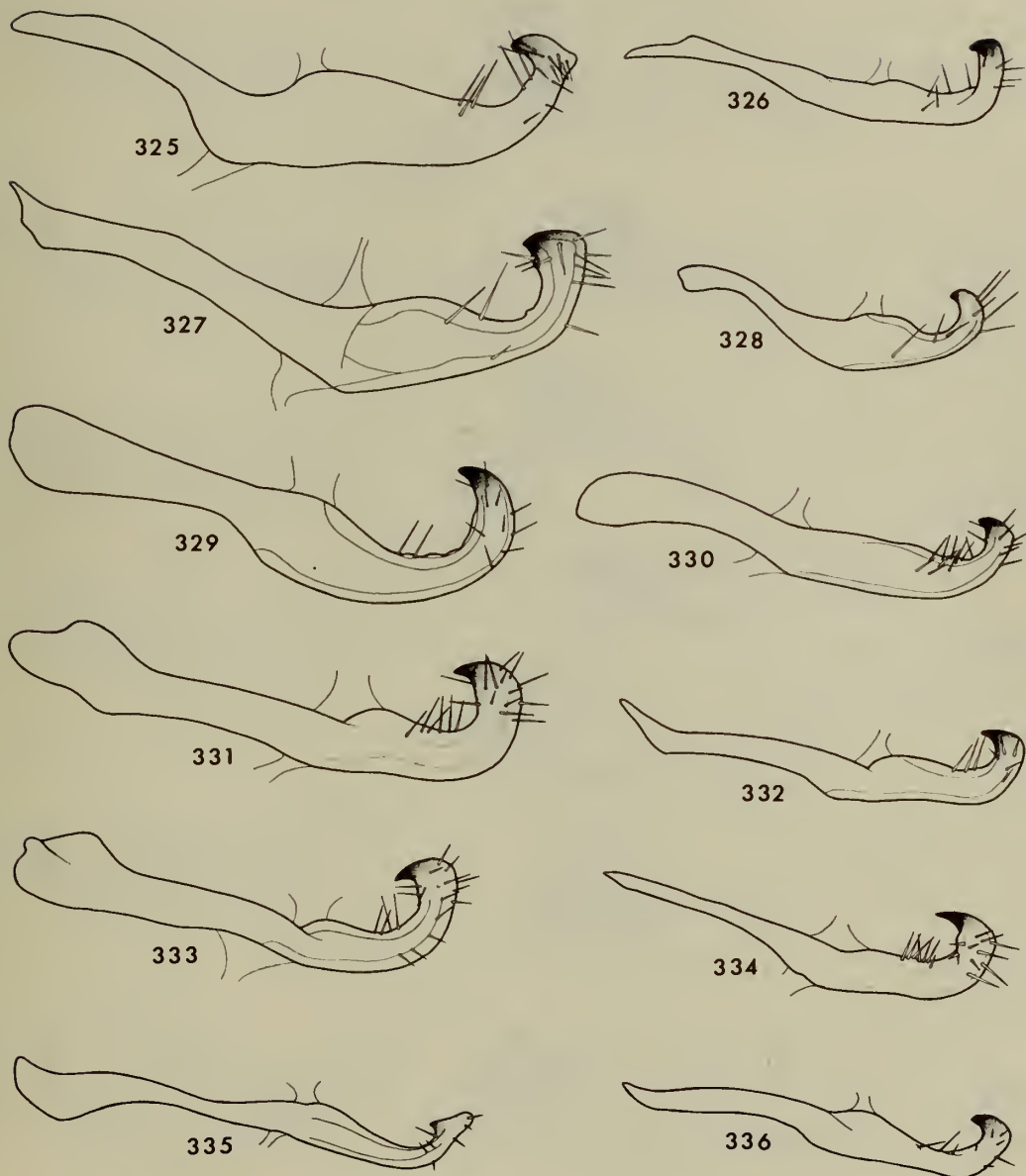
FIGS 273-293. Posterior view of aedeagus of *Amastris* species. 273, *fasciata*; 274, *lycioda*; 275, *brunneiipennis*; 276, *exigua*; 277, *inclinata*; 278, *exaltata*; 279, *subangulata*; 280, *fonsecai*; 281, *triviale*; 282, *robusta*; 283, *alapigmentata*; 284, *punctata*; 285, *froeschneri*; 286, *angulata*; 287, *vicina*; 288, *finitima*; 289, *pseudoelevata*; 290, *inconspicua*; 291, *obscura*; 292, *singularis*; 293, *undulata*.



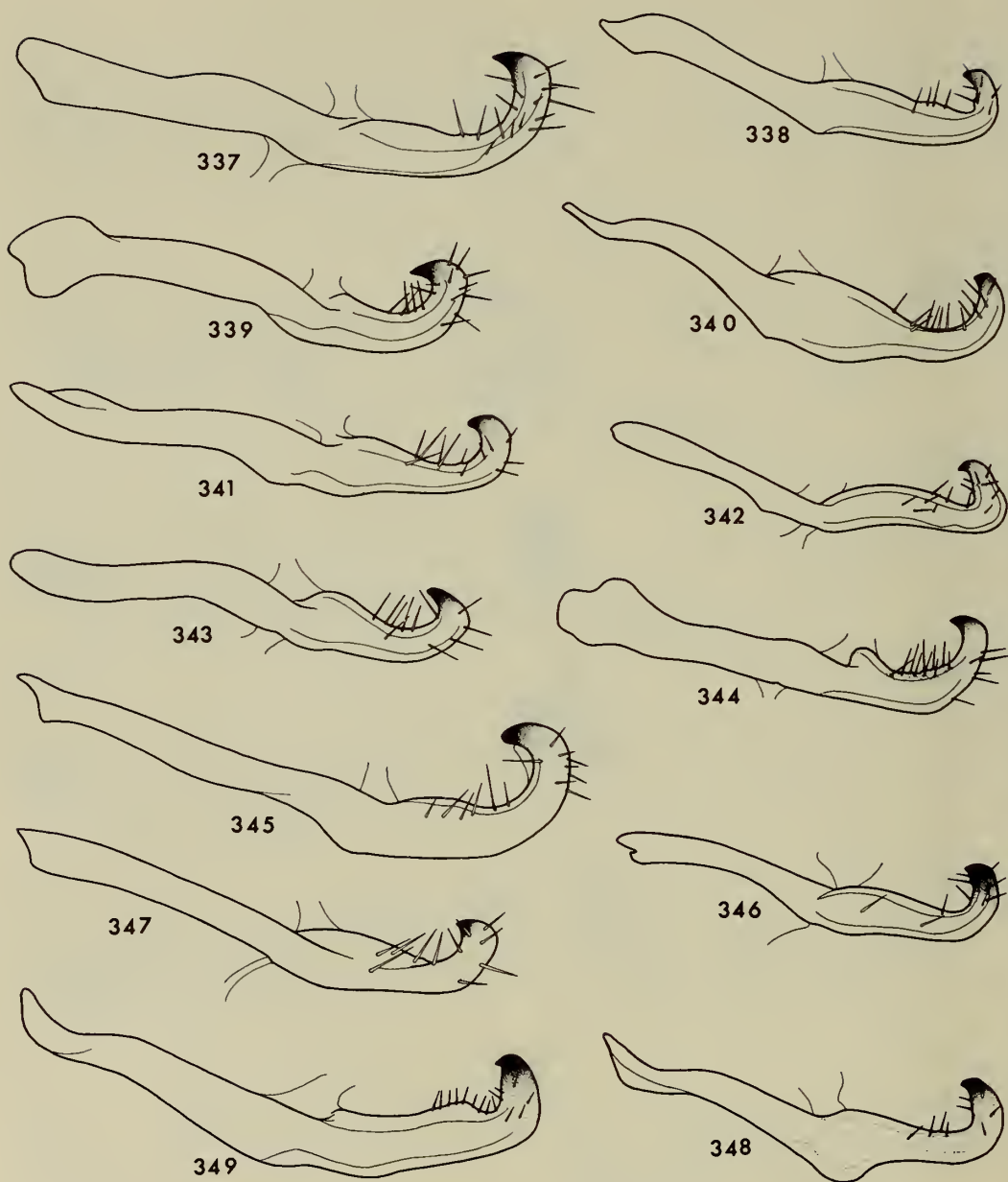
FIGS 294-312. Posterior view of aedeagus of *Amastris* species. 294, *viridisparsa*; 295, *flava*; 296, *reclusa*; 297, *guttata*; 298, *evexa*; 299, *affinis*; 300, *conspicua*; 301, *nottata*; 302, *pseudomaculata*; 303, *specialis*; 304, *gregaria*; 305, *funkhouserii*; 306, *inornata*; 307, *templa*; 308, *maculata*; 309, *inermis*; 310, *sakakibaraei*; 311, *depressa*; 312, *janae*.



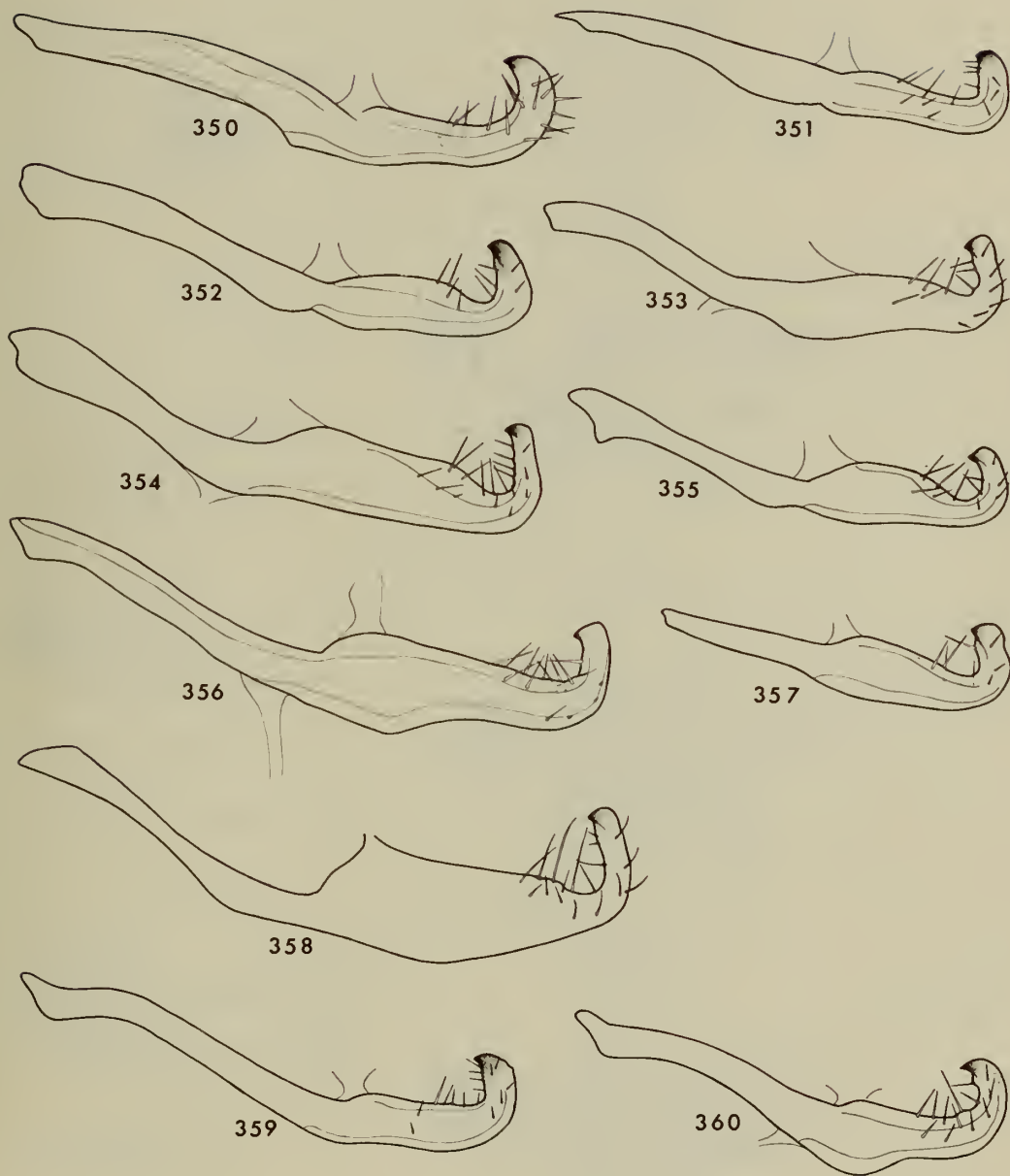
FIGS 313-324. Left lateral view of paramere of *Amastris* species. 313, *dissimilis*; 314, *exigua*; 315, *dama*; 316, *obtegens*; 317, *deplumis*; 318, *concolor*; 319, *fasciata*; 320, *vitallina*; 321, *ramosa*; 322, *knighti*; 323, *interstincta*; 324, *brunneiipennis*.



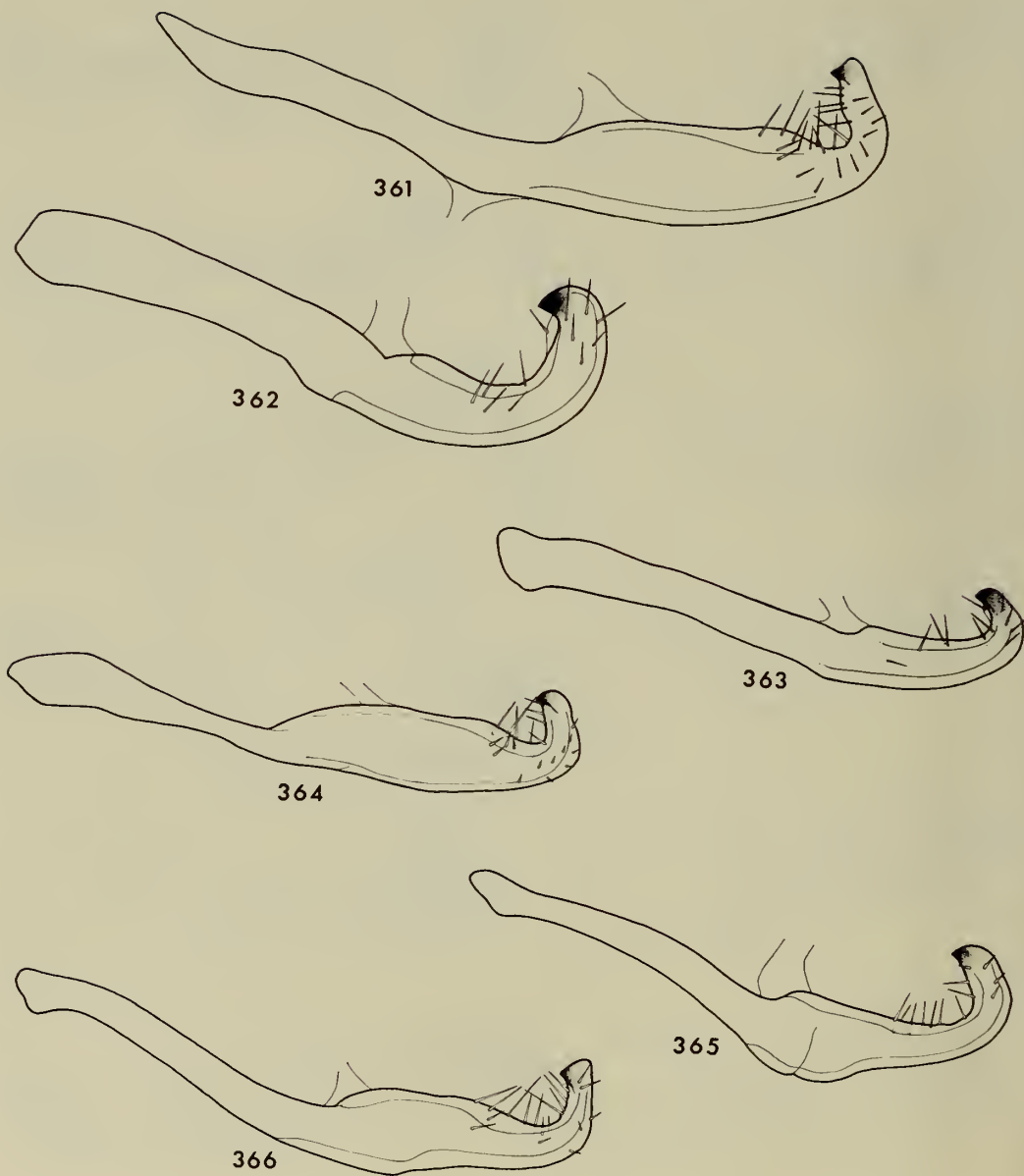
FIGS 325–336. Left lateral view of paramere of *Amastris* species. 325, *flavifolia*; 326, *unica*; 327, *vismiae*; 328, *minuta*; 329, *lycioda*; 330, *fonsecai*; 331, *exaltata*; 332, *triviale*; 333, *subangulata*; 334, *punctata*; 335, *inclinata*; 336, *froeschneri*.



FIGS 337-349. Left lateral view of paramere of *Amastris* species. 337, *robusta*; 338, *viridisparsa*; 339, *angulata*; 340, *flava*; 341, *vicina*; 342, *reclusa*; 343, *finitima*; 344, *conspicua*; 345, *pseudoelevata*; 346, *guttata*; 347, *inconspicua*; 348, *sakikabarai*; 349, *obscura*.



FIGS 350–360. Left lateral view of paramere of *Amastris* species. 350, *alapigmentata*; 351, *janae*; 352, *singularis*; 353, *notata*; 354, *undulata*; 355, *pseudomaculata*; 356, *evexa*; 357, *depressa*; 358, *affinis*; 359, *inornata*; 360, *maculata*.



FIGS 361-366. Left lateral view of paramere of *Amastris* species. 361, *specialis*; 362, *templa*; 363, *gregaria*; 364, *funkhouserii*; 365, *inermis*; 366, *melina*.

Synonyms are in *italics*; page references to descriptions are in **bold**.

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